

MARINE REVIEW.

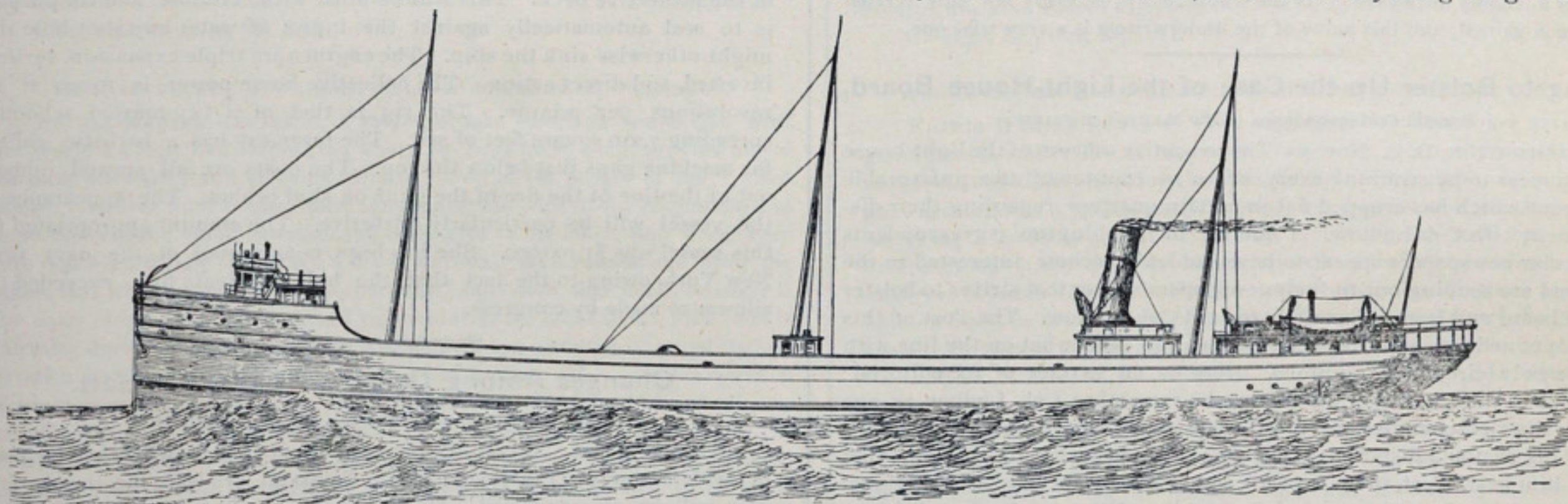
VOL. VI.

CLEVELAND, OHIO, THURSDAY, NOVEMBER 3, 1892.

No. 18.

Loss of the W. H. Gilcher.

Another big steel steamer, the W. H. Gilcher, a duplicate of the Western Reserve, has gone down on Lake Michigan with a crew of eighteen men. The details that go to confirm the disaster have been printed at great length, and little remains to be said in this regard. It is, however, certain that all practical men connected with the lake marine are of the opinion that this boat did not break up, as was the case with the Western Reserve, but was either in collision or struck the shoal spot four miles south of South Fox island, in the vicinity where the wreckage was found and where the vessel certainly met the great force of the storm on the night of Oct. 28. This opinion is based on the fact that the steamer was loaded with 3,000 tons of coal, a cargo largely within her capacity, and which would stiffen her against any possibility of foundering, excepting through collision with another vessel, or through running onto an obstruction of any kind. Aside from the awful loss of life, the money loss on vessel and cargo is the largest in lake history. The disaster, together with that of the Western Reserve, will open up many questions relative to construction and insurance that will cause numerous changes in present practice in building and operating vessels on the lakes.



LOST STEAMER W. H. GILCHER.

Lake Freight Matters.

Great delays to shipping during the past week through storms of unusual violence, together with some improvement in exports of grain, have combined to decrease the fears of a grain blockade at Buffalo, and the lake freight market is practically without change. Ore shippers have been taking tonnage freely at rates about equal to those of the past three weeks, \$1.30 from Ashland and Two Harbors, \$1.05 from Marquette and 80 cents from Escanaba to Ohio ports, and the demand for ore vessels promises to continue fairly active to the close of the season. There is little time left for vessels to take advantage of any rise in freights that might come now, and interest in the market is so slight as to warrant the belief that final cargoes will be provided for without any great departure from the present condition of fairly profitable carrying charges. Coal cargoes to the head of Lake Superior are still scarce, but the supply for all Lake Michigan ports is liberal, and the tendency is toward higher rates on the last cargoes to go up.

More Sault River Lights.

On Monday Capt. McKay, with the permission of the light-house board, ordered a light on the red buoy at the head

of Little Mud lake and on the black buoy at the turn, foot of Sugar island, St. Mary's river. The expense which will be very small, as the lights will be simply lanterns being on the buoys, will be borne by the association. At the foot of Sugar island the stretch of water is wide but the channel is very narrow and crooked. The ranges are all right but in trying to pick them up the vessel master does not know exactly when to put his helm to port, if bound either up or down. Several masters, among them Capt. E. B. Anderson of the Canadian Pacific steamer Manitoba, have asked for lights on these buoys in order to assist them in picking up the ranges, "I have run the river eight times after dark since the range lights were established," says Capt. Anderson "and I must say the foot of Sugar island is the only place that makes my hair stand on end. We locked through the canal with the Castalia a few days ago and when we got to the stakes on Lake George it was dark. At the Neebish Capt. Allen showed his good judgment in coming to an anchor to remain until morning. I came on down and got through, fortunately, but it is an awful strain on a man's nerves. Lights on the buoy mentioned will greatly relieve matters."

Admiralty Affairs.

At the Chicago conference of underwriters and counsel representing owners, a partial settlement was reached in several cases which involve a large amount of damages and which have not as yet reached the courts, but before anything is given out

regarding them it will be necessary to consult a number of interests not represented at the conference. There was conclusive proof in the meeting that all parties concerned in collision cases of late are anxious to avoid the courts where it is at all possible to reach an amicable settlement.

As a result of Judge Swan's decision at Detroit on Monday dividing damages in the Conemaugh-New York collision case an appeal will be taken to the circuit court. It is said that Judge Swan held the Conemaugh liable reluctantly, because she did not back her engines. The decision is considered a great victory for the Union Steamboat Company as the Anchor line expected to see the damages all thrown on the New York. The collision occurred in Detroit river about a year ago, the boats running afoul of each other in trying to avoid a tow. The trial in Detroit last winter lasted ten days. The owners of the Conemaugh brought up witnesses, but the owners of the New York surprised everybody by not calling any. The damages were about \$25,000.

In the appellate court, Cincinnati, recently the decision of United States District Judge Ricks of Cleveland in the Devereaux-Folsom-Mitchell case was reversed. This will be remembered as a Sault river collision case in which the boats involved were the iron steamer J. H. Devereaux and the steamer Folsom towing the schooner Mitchell. In reversing the decision of the lower court it was held that the Folsom was going at a moderate rate of speed and did not cause the Devereaux to sheer into the Mitchell.

CHICAGO LAKE INTERESTS.

WESTERN OFFICE, MARINE REVIEW,
No. 13 Western Union Building, CHICAGO, Ill., Nov. 3.

The Chicago Insurance Company has begun insuring grain cargoes. It was fortunate for the new company that the state authorities delayed issuing its papers until after the big blow. Much curiosity exists as to the effects of having grain shippers interested in the insurance business. Heretofore this business has been controlled by the Chicago Board of Marine Underwriters. It was seen that all the companies had a part of the business, and in this way peace was kept in the family of general agents. The local agents placed their business as they saw fit. Now that shippers will demand to have the new company receive a line on every cargo they ship, this arrangement is upset, and as no general agent ever yet received all the business he thought he was entitled to there may be trouble ahead. One general agent states in so many words that if his company is discriminated against, he will cut loose from the board and make what rates he sees fit. The profit on grain insurance is very heavy, and it is a fact that many companies make up for their losses in hull insurance by giving up part of their profits on grain. Probably nothing will come from the new company's organization this fall, but many agents expect trouble next spring. The organizers of the new company disclaim any purpose of interfering with business as it is now conducted, and say they only ask for a just show.

The arbitration committee, after being in session here three days, adjourned Saturday night. It was given out that all the big collision cases had been settled, so far as those present could do so. The compromise propositions had to be submitted to a number of people who were not represented at the meeting, and consequently the terms of settlement could not be made public. The owners and underwriters at the meeting seemed well satisfied at the results of their labors. The scheme of arbitration has thus far worked beautifully, but underwriters do not have much hope that it will avert litigation in big cases where the owners themselves must stand the consequences. Even while the arbitrators were in session, Capt. James Reid of Bay City was here trying to collect an arbitrated bill in the Butts case. Although all the parties in interest had submitted to arbitration, one or two held out when the decision of the arbitrators went against them, and Capt. Reid will have to sue in order to collect the award. On the whole, however, every law suit averted is so much gained, and this move of the underwriters is a very wise one.

Trying to Bolster Up the Case of the Light-House Board.

Special Correspondence to the MARINE REVIEW.

WASHINGTON, D. C., Nov. 3.—The executive officers of the light-house board appear to be straining every nerve to counteract the unfavorable sentiment which has cropped out in certain quarters regarding their disagreement with Col. Ludlow. A number of Washington correspondents for secular newspapers appear to have suddenly become interested in the case, and are sending out to their newspapers matter that strives to bolster up the board and lean unfavorably toward Col. Ludlow. The Post of this city contained an editorial a day or two ago, somewhat on the line with these newly circulated opinions. Here is an extract of its editorial: "Citizens of the District of Columbia who remember Col. Ludlow as one of the district commissioners will also remember him as a man with a will of his own and disposed to exercise his authority in the way that suited him best. Yet, in spite of his somewhat abrupt address and aggressive disposition, he was a man of first-rate qualities of head and heart. As to his engineering abilities there was never a question. But the colonel was out of place as one of three. Nature never designed him to be the third of a trinity, but to be a boss unto himself. Hence he was not altogether popular as a commissioner, and was thought a hard man to get along with, especially by those who undertook to instruct him in the discharge of his official duties. We are not surprised, therefore, to learn that he has had trouble in his administration of the St. Mary's river improvement."

The Post embodies in the article the following from the Philadelphia Times: "Col. Ludlow's row with the light-house board is characteristic all the way through. He was in charge of the Michigan district, and was directed to proceed with the lighting of the St. Mary's river, according to a plan furnished by the board. As Ludlow knew the river and the board did not, and as he perceived that the plan would not answer, he changed it for one of his own, whereupon he was removed for insubordination. The civil members of the board now want to reinstate him, but the military members object that that would be destructive to discipline. Meanwhile it is announced that the plan of the board for lighting the St. Mary's river will undergo 'strengthening and elaboration'—apparently in accordance with the ideas of the insubordinate colonel. Col. Ludlow was lost to the Philadelphia water department because Bardsley and Rowan found him insubordinate. He understood his business and insisted on doing it in the right way. Rowan is dead and Bardsley is in prison, and the other councilmen are finding out that Ludlow had a more far-sighted grasp on the water problem than anybody before or since."

The relations of Col. Ludlow to the Philadelphia water department were not of an agreeable character, but, as the Times says, he understood his business much better than the men who sought to "run" him, and it

is now conceded that the city was unfortunate in losing his services. Col. Ludlow is generally right in his judgment, but he is thoroughly unfitted by the supreme self-confidence of his temperament to brook anything in the nature of intermeddling or officious opposition.

Alexander C. Kirk, the distinguished engineer who died at Glasgow recently, may properly be called the father of the modern marine engine, inasmuch as he successfully introduced the triple expansion engine, which has now almost displaced the older compound type. His death has an added significance to Americans, from the fact that he had taken a lively interest in the success of the engineering congress, which is to be held at Chicago next year, and was a member of the advisory council of the division of marine and naval engineering, of which Commodore Melville is chairman. He had consented to prepare a paper giving a historical account of the growth of the triple expansion engine and the probabilities of future progress in the way of higher pressures and more stages in the expansion. Commodore Melville has just received a letter from his son, Mr. John Kirk, which among other things states that the preparation of this paper was the last work his father did, and that he was engaged on it when seized with the illness which carried him off.

On Nov. 5 the protected cruiser No. 6, which will cost the government \$1,796,900, will be launched at the Union Iron Works, San Francisco. It is a vessel of 5,500 tons displacement, and the engines are designed to yield an indicated horse power of 13,500. Secretary Tracy has decided to name the boat the Olympia, after the capital city of the state of Washington. Two days later, the cruiser heretofore known as No. 7, will be launched, and given the name of Cincinnati. The designs of the Cincinnati are the outcome of the bureaus of construction and repair and steam engineering, the former being represented by Chief Constructor T. D. Wilson and the latter by Engineer-in-Chief George W. Melville. The Cincinnati is a twin-screw steel cruiser of 3,183 tons displacement, with heavy protective deck, great speed, and heavy batteries of rapid-fire guns. She is 300 feet long, draws 18 feet of water, has 10,000 horse power engines, and a speed of 19 knots an hour. A cofferdam is worked along in the wake of the water line next the outside plating in the coal bunker on the slopes of the protective deck. This will be filled with cellulose, and its purpose is to seal automatically against the influx of water any shot hole that might otherwise sink the ship. The engines are triple expansion, vertical, inverted, and direct-acting. The collective horse power is 10,000 at 164 revolutions per minute. The rig is that of a two-masted schooner, spreading 7,210 square feet of sail. The foremast has a barbet gallery for machine guns just below the top. The boats are all stowed inboard out of the line of the fire of the guns on skid beams. The appearance of the vessel will be particularly attractive. The amount appropriated for this vessel was \$1,100,000. She has been constructed at the navy yard, New York, owing to the fact that the bids of private firms exceeded the allowance made by congress.

Changes Among Canadian Canal Officials.

Special Correspondence to the MARINE REVIEW.

KINGSTON, Ont., Nov. 3.—Several important changes will soon be made in the department of canals at Ottawa. Toussaint Trudeau, the deputy minister, will be superannuated. He has been acting as secretary and chief engineer at \$6,000 per annum. He will be succeeded by Collingwood Schrieber, chief engineer of government railways, as deputy minister, and J. P. Balderson will be appointed secretary of the department at \$3,000 per year.

The Montreal Transportation Company is negotiating for a new steel steamer from England, to ply between Kingston and Chicago, with an accommodation for 200 passengers. She will be the full length of the Welland canal locks. It is expected that she will be here next spring.

The Grand Trunk Railroad Company's new elevator at Collingwood is finished and will be opened this week. It will hold 100,000 bushels.

The work on the Canadian "Soo" is being pushed through rapidly, and there is now no question about the completion of the work by the end of 1893. The lock will accommodate three of the largest vessels on the lakes, and will be oval-shaped.

Official Numbers and Tonnage.

The bureau of navigation, E. C. O'Brien commissioner, assigned official numbers to the following lake vessels during two weeks ending Saturday, Oct. 29: Steam—Perfection, built at West Bay City and enrolled at Port Huron, 70.58 tons gross, 42.58 net, No. 150,609; Pauline Hickler, built and owned in Buffalo, 37.84 tons gross, 18.92 net, No. 150,610; Elizabeth G., built at Manistee, Mich., and hailing from Milwaukee, 24.71 tons gross, 18.80 net, No. 136,336; John M. Edson, built at Sandusky and hailing from Toledo, O., 20.00 tons gross, 10.00 net, No. 76,066; Surprise, built at Sandusky and hailing from Toledo, 17.00 tons gross, 8.50 net, No. 116,542. Sail—Whistler, built and owned in Detroit, 7.76 tons gross, 7.38 net, No. 81,411. Unrigged—Barge 126, built at Superior and enrolled at Buffalo, 1,128.41 tons gross, 1,083.51 net, No. 53,273; barge 127, built at Superior and enrolled at Buffalo, 1,128.41 tons gross, 1,083.51 net, No. 53,274.

Opinions on the Proposed World's Fair Display.

It was suggested in the REVIEW last week that a parade or display of lake vessels be given next summer in connection with the World's Columbian Exposition. Before proposing any definite plans for such an undertaking, it was first decided to gain an expression of opinion from vessel owners and others in different parts of the lakes. Following are some of the letters received:

FROM MR. B. L. PENNINGTON.

EDITOR MARINE REVIEW: I believe such an exhibition of our finest lake steamers, off Chicago, during some day or days of the World's Columbian Exposition, would be advantageous in advertising our peerless ship building industries and in dignifying our magnificent lake commerce in the eyes of the people of all lands assembled there. However, I fear it would not be practicable; that not enough owners of such vessels would be willing to make the sacrifice to make a creditable exhibition. Steamers trading to Chicago and South Chicago might be assembled there on the day or days appointed, without much expense or sacrifice of time, but not in sufficient numbers for a creditable display; and in my opinion not enough traffic could be prearranged to those points at that time for anything like sufficient tonnage for the show. Steamers running light from Lake Erie to Escanaba could run on up and exhibit themselves without great sacrifice. Steamers trading between Lake Superior and Lake Erie ports would lose more time, not only from their remoteness, but many of them being obliged to lose the time of part of a trip (perhaps nearly the whole of a trip,) as an additional one can not be made before it is necessary for the steamer to leave for the exposition. The scattered vessels thus brought together at Chicago and going at once into employment after the exhibition, all being fast steamers, would huddle at the docks and more delay ensue. Furthermore, if the weather should be stormy or foggy during the time of such exhibition, accidents would likely result. As I have stated, it would be a fine sight, and the result of such display advantageous to our lake interests, but the cost should be fully considered. A promise to enter into it and a violation, when, near the time, it is discovered the sacrifice will be greater than anticipated, would render the display a failure after it had been advertised, and no display were better than a failure in my opinion.

B. L. PENNINGTON.

Cleveland, O., Oct. 30, 1892.

FROM SECRETARY THOMPSON, DULUTH CHAMBER OF COMMERCE.

EDITOR MARINE REVIEW: A review of lake vessels in connection with the World's Columbian Exposition would be from every point of view one of the most interesting and valuable features. Few of the people of the United States, wherever their homes, have any adequate idea of the magnitude and importance of the vessel interests and commerce of the lakes, and I am very sure that even if they should see a dozen or twenty lake vessels, one after the other, that it would not make anywhere the impression that would be made if the same dozen or twenty should pass one after the other in a review, and if the same dozen or twenty could be augmented to one or two hundred the impression would be so much the more deep and lasting. Of course, the question is whether vessel owners can be led to see that the effect would be of value as affecting future legislation in regard to vessels, lake channels, harbors, etc., or rather whether it would be of sufficient value to pay them for the direct expense and loss of time involved. I believe myself that it would be worth while and hope that the marine papers and the daily papers throughout the whole length of the lakes will agitate the matter, so that, if possible, we can have a grand marine review as one of the crowning features of the coming exposition.

Duluth, Minn., Oct. 31, 1892.

S. A. THOMPSON.

FROM J. S. DUNHAM OF CHICAGO.

EDITOR MARINE REVIEW: I think it would be impossible to get the merchant marine of the lakes to give a parade or review at the coming World's Columbian Exposition, for the reason in the first place that there is no way of raising money to charter vessels for such a purpose and it would have to be done by owners voluntarily giving the use of their vessels. In such a case there would be no way of equalizing the expense, for in concentrating a lot of steamers here for the purpose some of them would be delayed here a week or two, while others might be here at the proper day and would be able to give their services without any expense. My opinion is that it would be impossible to get up anything of the kind with the merchant marine of the lakes.

Chicago, Ill., Oct. 30, 1892.

J. S. DUNHAM.

FROM O. M. POE, COL. CORPS OF ENGINEERS, BRVT. BRIG. GEN. U. S. A.

EDITOR MARINE REVIEW: Replying to yours of the 28th inst., requesting from me an expression of opinion in regard to a proposed review of lake vessels to be given in connection with the coming World's Columbian Exposition at Chicago, I have to say that the proposition has my heartiest endorsement. I cannot conceive a more valuable object lesson, and think it would go far towards educating the people of the country generally to the great importance of our lake marine, and carry conviction as to the policy of fostering it in every possible way, particularly in regard to river and harbor improvements

and ample aids to navigation in the way of light-houses, fog signals and buoys. I therefore trust that the matter will be agitated with a view to carrying the proposition into effect. With full co-operation on the part of vessel owners such a parade could be made one of the most notable features of the exposition. Of course, the cost would be great, but the public spirit of our vessel interests is such that they would undertake a good deal.

O. M. POE,

Colonel Corps of Engineers,

Detroit, Mich., Oct. 28, 1892.

Bvt. Brig. General, U. S. A.

FROM ALEXANDER MC VITTIE, DETROIT DRY DOCK CO.

EDITOR MARINE REVIEW: Doubtless a parade or review of one hundred or more of our largest wooden, composite and metal ships at the Columbian fair would be a very handsome sight for the multitude of visitors that will be there, but I cannot see what benefit our ship builders or ship owners could derive from such a display. We don't need any of the foreigners' gold to build nor own ships for our lake trade, for our own people have the funds, and a boom in freights causes them to freely invest in tonnage. If, however, it were possible to inspire our people, and especially our legislators, with an ambition to extend the 20-foot water way to the seaboard, any outlay in way of a display at the world's fair, or otherwise, no matter so much about the cost, would be money well spent.

A. MCVITTIE.

Detroit, Mich., Oct. 30, 1892.

FROM C. E. KREMER, PROCTOR IN ADMIRALTY.

EDITOR MARINE REVIEW: While a parade or review of lake vessels would, no doubt, be a very interesting, enjoyable and instructive feature of the fair, I fear it would be entirely impracticable beyond a few of such vessels as might happen to be in port or near this port on the day of the demonstration. I doubt whether sufficient enthusiasm exists among vessel owners to put themselves out and to expense for the purpose of exhibiting their craft. The interest also which the public would manifest, it seems to me, would not be as great as many would anticipate, for at Chicago we have comparatively few vessel owners and the marine interests are of slight importance as compared with many others. I should be glad, of course, to aid in securing a review of this kind should sufficient interest be awakened to make it a success.

Chicago, Ill., Oct. 29, 1892.

C. E. KREMER.

FROM GENERAL MANAGER GORDON, NORTHERN STEAMSHIP COMPANY.

EDITOR MARINE REVIEW: The suggestion that "on some given day a grand parade and review of lake steam vessels be given in connection with the great attractions attending the World's Columbian Exposition at Chicago," has certainly a very attractive sound, but I agree with you that the undertaking is hardly practicable, not only from its great cost, but for many other reasons equally as good. Such a parade if limited to one each of different types of steam vessels would make a very creditable display, and in my opinion could be materialized by proper effort. I shall always be glad to assist any movement looking to the advancement of lake interests.

Buffalo, N. Y., Oct. 29, 1892.

JOHN GORDON.

FROM SECRETARY GEORGE W. LANE, DETROIT BOARD OF TRADE.

EDITOR MARINE REVIEW: The suggestion of a review of the lake marine at some time during the World's Columbian Exposition is certainly an excellent one and worthy of serious consideration. If it could be made successful, it would, without doubt, be one of the marked features of the whole exposition. The really serious difficulty connected with the project would be the doubt about collecting, at one date, a sufficient number of our great steel steamers and of our sailing vessels to make a creditable exhibition of the magnitude of our lake marine. If vessel owners could be induced to incur the expense and loss of time attending such a review it would doubtless be a great event. Of this, however, there would be much doubt. The question of undertaking it would rest wholly with vessel owners. Should the managers of the exposition have sufficient means to bear this expense, or even a portion of it, that would make it quite possible, and would ensure success if undertaken. Such a suggestion could be considered only by the board.

Detroit, Mich., Oct. 28, 1892.

GEORGE W. LANE.

FROM SECRETARY MC MILLAN, DETROIT DRY DOCK COMPANY.

EDITOR MARINE REVIEW: I think it would be very desirable indeed could a marine display be made at the World's Columbian Exposition, and would gladly do anything that I might be able to towards helping the same. I hope that you will be successful in getting up enough public interest to bring about a suitable display.

Detroit, Mich., Oct. 28, 1892.

GILBERT N. McMILLAN.

ANY ONE SENDING TWO ADDRESSES AND \$4 TO THE MARINE REVIEW, 516 PERRY-PAYNE BUILDING, CLEVELAND, WILL, IN ADDITION TO HAVING THE BEST MARINE PAPER SENT TO THEM FOR A YEAR, RECEIVE A COPY OF WASHINGTON IRVING'S LIFE AND VOYAGES OF CHRISTOPHER COLUMBUS.

Next Season's New Tonnage.

CONTRACTS IN ALL LAKE SHIP YARDS FOR DELIVERY OF NEW VESSELS NEXT SPRING:

Lake ship builders now have contracts to build during the coming winter, for delivery at about the opening of navigation, forty-nine vessels, valued at \$6,909,500. These totals, together with the valuable detail regarding the new tonnage which is contained in the accompanying table, were secured through correspondence with every shipbuilder on the chain of lakes, and the comparison with fall contracts in previous years is made in accordance with a similar inquiry in the past. The record in both the number of vessels and aggregate value for this year is very much ahead of the two previous years, but it will be found by a glance at the comparative table that in both number and carrying capacity the showing in large freight carrying steamers is somewhat smaller than in any year for six years past. This is due largely to the fact that three of the most important steel yards are crowded with work on the large passenger vessels. Twenty-eight freight steamers and consorts, of 68,470 gross tons

been closed within the past few days. The Detroit Dry Dock Company will build for Capt. E. M. Peck of Detroit and Harvey H. Brown of Cleveland, a steel steamer, which will be a duplicate of the boat for Eddy Bros. of Bay City, now nearing completion at the Wyandotte yard. On Monday the Union Dry Dock Company of Buffalo closed a contract with the Lake Erie Transportation Company of Toledo for a steel steamer to carry 2,500 tons and to cost \$170,000. The boat will be larger than the S. C. Reynolds of the same line.

NOT INCLUDED IN THE GENERAL LIST.

Folger Bros., Kingston, Ont., are having plans prepared for an 18-mile passenger steamer, Thomas Marks & Co., Port Arthur, Ont., are contemplating a contract for a 2,000 ton steamer, and some Canadian yard will probably get it. The Montreal Transportation Co., Kingston, Ont., recently launched a 30,000 bushel barge. The Williams Transportation Company, South Haven, Mich., is completing work on a small passenger steamer. The Grand Haven Ship Building Co., Grand Haven, Mich., has a tug and a 120-foot passenger steamer on the stocks.

BUILDERS REPORTING NO CONTRACTS.

The following ship builders report nothing contracted for or on the stocks: Rogers & Bird, Saugatuck, Mich.; C. C.

VESSELS UNDER CONTRACT IN LAKE SHIP YARDS NOV. 1, 1892.

BUILDERS.	CLASS.	DIMENSIONS.			Capacity of freight vessels gross tons.	VALUE.	FOR WHOM BUILDING.
		Length over all	Br'dth.	Depth.			
American Steel Barge Co., W. Superior, Wis.	Steel Tow Barge	265	36	22	2,625	\$100,000	American Steel Barge Co.
American Steel Barge Co., W. Superior, Wis.	Steel Tow Barge	265	36	22	2,625	100,000	" " " "
American Steel Barge Co., W. Superior, Wis.	Steel Tow Barge	292	36	22	2,975	100,000	" " " "
American Steel Barge Co., W. Superior, Wis.	Steel Tow Barge	292	36	22	2,975	100,000	" " " "
American Steel Barge Co., W. Superior, Wis.	Steel Passenger Steamer	361	42	24		400,000	World's Fair Steamship Company.
Alex. Anderson, Marine City, Mich.	Wooden Freight Steamer	190	35	13	950	70,000	Hurd & Hannenstein, Buffalo, N. Y.
Bell, David, Buffalo, N. Y.	U. S. Revenue Cutter	94½	20½	10¼		38,500	U. S. Government.
Bell, David, Buffalo, N. Y.	Steel Steam Yacht	80	18	5		15,000	Builder's Account.
Chicago Ship Building Co., Colehour, Ill.	Steel Passenger Steamer	275	42	24½	1,300	300,000	Lake Mich. & Lake Superior Transit Co., Chicago.
Chicago Ship Building Co., Colehour, Ill.	Steel Freight Steamer	287	41	24½	2,800	160,000	C. W. Elphicke and others, Chicago, Ill.
Carkin, Stickney & Cram, E. Saginaw, Mich.	Wooden Tug	78	18	10		15,000	Carkin, Stickney & Cram.
Curtis & Brainard, Marine City, Mich.	Wooden Barge	195	34	12	1,200	30,000	Builder's Account.
Craig Ship Building Company, Toledo, O.	Car Ferry Steamer	261	52	18	1,000	200,000	Toledo, Ann Arbor & Northern Michigan Ry.
Craig Ship Building Company, Toledo, O.	Steam Fire Boat					30,000	City of Detroit, Mich.
Cleveland Ship Building Co., Cleveland, O.	Steel Freight Steamer	340	42	24	3,100	200,000	Wilson Transit Co., Cleveland, O.
Cleveland Ship Building Co., Cleveland, O.	Steel Freight Steamer	324	42	24½	2,850	190,000	M. A. Bradley and others, Cleveland, O.
Detroit Dry Dock Co., Detroit, Mich.	Steel Freight Steamer	360	42	24	4,000	225,000	Eddy Bros., Bay City, Mich.
Detroit Dry Dock Co., Detroit, Mich.	Steel Freight Steamer	360	42	24	4,000	225,000	Capt. E. M. Peck, Detroit, Mich.
Detroit Dry Dock Co., Detroit, Mich.	Steel Passenger Steamer	264	38	20		300,000	Detroit & Cleveland Steam Nav. Co., Detroit, Mich.
Detroit Dry Dock Co., Detroit, Mich.	Steel Passenger Steamer	264	38	20		300,000	" " " "
Detroit Dry Dock Co., Detroit, Mich.	Steel Freight Steamer	310	42	24	2,200	225,000	Western Transit Co., Buffalo, N. Y.
Detroit Dry Dock Co., Detroit, Mich.	Wooden Ferry Steamer	300	52	22		300,000	Michigan Central R. R., Detroit, Mich.
Davidson, James, W. Bay City, Mich.	Wooden Tug					15,000	Capt. Ruelle, Detroit, Mich.
Davidson, James, W. Bay City, Mich.	Wooden Schooner	*212	35	19	2,100	60,000	James Davidson, Bay City, Mich.
Davidson, James, W. Bay City, Mich.	Wooden Schooner	*212	35	19	2,100	60,000	" " " "
Davidson, James, W. Bay City, Mich.	Wooden Schooner	*212	35	19	2,100	60,000	" " " "
Davidson, James, W. Bay City, Mich.	Wooden Schooner	*212	35	19	2,100	60,000	" " " "
Davidson, James, W. Bay City, Mich.	Wooden Steamer	326	42	26	2,800	150,000	" " " "
Globe Iron Works Co., Cleveland, O.	Steel Passenger Steamer	380	44	34		500,000	James J. Hill, St. Paul, Minn.
Globe Iron Works Co., Cleveland, O.	Steel Passenger Steamer	380	44	34		500,000	" " " "
Globe Iron Works Co., Cleveland, O.	Steel Freight Steamer	302	38	24	2,500	170,000	Lorain Steamship Co., Lorain, O.
Heath, E. W., Benton Harbor, Mich.	Tug					11,000	Barry Brothers, Chicago, Ill.
Hamilton Bridge Co., Hamilton, Ont.	Steel Passenger Steamer	311	26	13½		200,000	Niagara Navigation Co., Toronto, Ont.
Kirby, T. W., Grand Haven, Mich.	Tug	97	19	7		12,000	T. W. Kirby.
Montreal Transportation Co., Kingston, Ont.	Steel Passenger Steamer	260				150,000	Montreal Transportation Co.
Murphy, Wm., Baker St., Buffalo, N. Y.	Wooden Excursion Steamer	185	38	12½		50,000	Buffalo Parties.
Murphy, Wm., Baker St., Buffalo, N. Y.	Wooden Excursion Steamer	97	17	7		10,000	Wm. Murphy.
Murphy, Wm., Baker St., Buffalo, N. Y.	Wooden Excursion Steamer	97	17	7		10,000	Builder's Account.
Polson Iron Works, Owen Sound, Ont.	Steel Revenue Cutter	125	19	9½		40,000	Canadian Government.
Polson Iron Works, Owen Sound, Ont.	Steel Revenue Cutter	125	22	8		42,000	" " " "
Rieboldt, Wolter & Co., Sheboygan, Wis.	Tug	75	14	7		6,000	Gus. Gunderson, Sheboygan, Wis.
Simpson, Capt., Owen Sound, Ont.	Wooden Passenger Steamer				1,200	100,000	North Shore Navigation Co.
Smith, Abram, & Co., Algonac, Mich.	Wooden Tow Barge	170	34	11	970	30,000	A. W. Comstock, Alpena, Mich.
Union Dry Dock Co., Buffalo, N. Y.	Steel Freight Steamer	270	40	24	2,500	170,000	Lake Erie Transportation Co., Toledo, O.
Wheeler, F. W., & Co., W. Bay City, Mich.	Steel Freight Steamer	*328	42	24¼	3,200	215,000	Mitchell Transportation Co., Cleveland, O.
Wheeler, F. W., & Co., W. Bay City, Mich.	Steel Freight Steamer	*360	45	25	3,700	230,000	Hawgood & Avery Transit Co., Cleveland, O.
Wheeler, F. W., & Co., W. Bay City, Mich.	Steel Freight Steamer	*360	45	25	3,700	230,000	D. C. Whitney, Detroit, Mich.
Wheeler, F. W., & Co., W. Bay City, Mich.	Wooden Freight Steamer	*290	41	23	2,400	130,000	Hawgood & Canfield, Cleveland, O.
Wheeler, F. W., & Co., W. Bay City, Mich.	Wooden Schooner	*250	41	18	2,500	75,000	Colin McLachlin, Detroit, Mich.
* Keel length.					68,470	6,909,500	

capacity, will, however, be added to the fleet of this class of vessels in the spring.

The following table shows the number and value of contracts on Nov. 1 of this year as compared with contracts on the same date in previous years. The totals represent simply the winter work of the ship yards and not their entire work for the several years:

WINTER OF	Number of boats.	Capacity gross tons.	Valuation.
1886-87.....	31	65,750	\$4,074,000
1887-88.....	60	108,525	8,325,000
1888-89.....	59	100,950	7,124,000
1889-90.....	56	124,750	7,866,000
1890-91.....	38	77,950	5,337,000
1891-92.....	45	76,000	4,896,000
1892-93.....	49	68,470	6,909,500
Total.....	338	632,395	\$44,531,500

TWO LATE CONTRACTS.

Two important contracts included in the above list have

Fowles, Fort Howard, Wis.; William Dulac, Mount Clemens, Mich.; Milwaukee Dry Dock Co., Milwaukee, Wis.; C. T. Morley, Marine City, Mich.; R. W. Linn, Gibraltar, Mich.; W. S. Roberts, Marine City, Mich.

Work in Ship Yards throughout the United States.

For several years the MARINE REVIEW has presented each fall a report of new work and contracts in lake ship yards, giving tonnage and valuation and name of party for whom craft is building. This report, on account of its reliability and the information it contains, is valued by vessel owners and concerns all over the country having business relations with lake ship builders. Such a report this year is given on another page. In view of the interest created by work of this kind on the lakes it was thought worth the trouble to collect information of a similar character from all the yards in the United States, something that has never been attempted by any marine paper, because of the labor and expense attached. The result is not entirely satisfactory, but the information given below will be found to cover the larger yards on the coasts and rivers, reports stating that ship building on both coasts is unusually dull. For convenience the naval work has been included in a table, showing yards where it

is located. The tons displacements of the naval vessels building and being completed amounts to about 100,500, and the total valuation \$53,000,000. Owing to builders of merchant vessels reporting net register and cargo tonnage the total merchant tonnage reported building can not be computed exactly but is about 35,000 tons cargo carrying capacity, having an approximate valuation of \$4,560,000. Being in correspondence with coast builders now the next report presented by the REVIEW can be put forth as a complete statement of all ship building in the United States.

Atlantic Works, East Boston, Mass.—Tug building—and between 200 and 300 men employed in repair work.

Bath Iron Works, Bath, Me.—The Machias, Castine and harbor defense ram, described in list of naval construction.

Wm. Cramp & Sons, Philadelphia, Pa.—Nothing building except naval vessels, but about Jan. 1 will have plans completed for five 8,000-ton International liners, similar to the City of New York.

Delaware River Iron Ship Building & Engine Works, Chester, Pa.—Sidewheel passenger steamer, 4,500 tons, valued at \$1,250,000 for the Old Colony Steamboat Company, to be engined by W. & A. Fletcher Co., Hoboken, N. J. The Delaware company is building a \$25,000 70-ton yacht for Fall River parties.

Jno. H. Dialogue & Son, Camden, N. J.—U. S. revenue cutter Windom, value \$37,000; steel tug 110 feet long; steel stern-wheel steamer, 160 feet long.

Howard's Ship Yard, Jeffersonville, Ind.—One steel, double hull, ferry steamer of 700 tons; one side-wheel passenger and freight steamer of 800 tons; one stern wheel passenger steamer of 250 tons; one wheel ferry steamer of 750 tons; two railroad transfer barges of 300 and 500 tons; one stern-wheel towboat of 350 tons; one landing barge of 200 tons; one railroad transfer barge of 300 tons, and one stern-wheel cotton steamer of 650 tons.

Chas. Hillman & Sons Ship & Engine Building Company, Philadelphia, Pa.—Steamer for the Ericsson line.

Harlan & Hallingsworth Co., Wilmington, Del.—Two double screw ferry steamers for Central Railroad of N. J. 500 tons each and \$85,000 each; screw steam yacht, 225 tons for William DuPont.

Harrison Loring, Jr., City Point Works, Boston, Mass.—Deferred taking contracts until the cruiser Marblehead is completed, which will take several months. N. F. Palmer, Jr., & Co. is building machinery for the Marblehead.

Iowa Iron Works, Dubuque, Ia.—In addition to torpedo cruiser No. 2 shown in the naval list, will probably build a \$200,000 steamer for the Lucius Ship Building Company, St. Louis.

George Lawley & Son Corporation, South Boston, Mass.—Two steam yachts of 98 and 41 tons and valued at \$20,000 and \$13,000 for R. H. White, Boston, Mass.; a 60-ton sail yacht worth \$15,000 for Warren R. Fales, Pawtucket, R. I.

C. V. Minnott, Phippsburg, Me.—Sailing ship, 2,200 tons, valued at \$100,000, for himself.

Samuel L. Moore & Sons Co., Elizabeth, N. J.—In addition to the practice cruiser Bancroft are building the United States light-house tender Maple.

Maryland Steel Co., Marine Department, Sparrows Point, Md.—Alabama, passenger and freight steamer 1,800 tons, for Baltimore Steam Packet Co., Baltimore, Md.; tug Germania, 75 tons, Baker & Whiteley, Baltimore, Md.; tug Frances, 80 tons, Ross & Sandford, Baltimore, Md.; tug No. 9, 80 tons, builders' account; passenger and freight steamer, 2,800 tons, Merchants' and Miners' Transportation Co., Baltimore, Md.; tug No. 11, 150 tons, B. & O. Railroad Co., New York; total 4,985 tons.

John Myers' Son, Washington, N. C.—Tug, 76 feet keel, 15 feet beam, for Coughton & Sizer, Yeatisville, N. C.

T. S. Marvel & Co., Newburgh, N. Y.—Screw ferry boat, 1,100 tons for Hoboken Ferry Co.; tug, 200 tons for Connell Steamboat Company; two cargo lighters for Cuba, 100 tons each; total, 1,500 tons, valuation \$110,000.

Newport News Ship Building & Dry Dock Company, Newport News, Va., office 1 Broadway, New York.—Two steam freighters, El Rio and No. 6, 5,000 tons each, valued at \$525,000 each for Southern Pacific Company. The El Sud and El Norte, same tonnage and valuation, were recently delivered to the same company; total 20,000 tons; valuation \$2,100,000.

A. R. Reed & Co., Waldoboro, Me.—Three-masted schooner Madaline Cooney, 750 tons, launched Nov. 2 for A. R. Reed and others. Ida C. Southard, 777 tons, was recently completed.

Arthur Sewall & Co., Bath, Me.—Four-masted steel ship, 2,750 tons. The Roanoke, 3,540 tons, was recently completed.

A. J. Sweeney & Son, Wheeling, W. Va.—Stern-wheel packet steamer, 600 tons, valued at \$35,000, for J. M. Gamble, Marietta, O.; stern-wheel steamer, 115 feet, 22 feet beam, for G. M. Berry, Williamstown, W. Va. The packet steamer is finely equipped and has an incandescent lighting plant.

Tarr & James, Essex, Mass.—Halibut fishing schooner, 115 tons; tug for L. G. Burnham, Boston, Mass.

William E. Woodall & Co., Baltimore, Md.—Passenger and freight steamer Greenesborough, 400 tons, \$25,000, for Capt. D. I. Brockway; tug John J. Mahon, 50 tons, \$14,000, Campbell & Zell Co.; tug Mary E. Woodall, 100 tons, \$20,000, Capt. Saml. P. Wilson; tug E. W. Marts, 40 tons, \$10,000, Capt. G. M. Wallen; fish tug, 500 tons, \$30,000, Capt. G. F. Bussells; total, 1,090, \$99,000.

U. S. NAVAL VESSELS UNDER CONSTRUCTION.

NAME.	TONS DIS- PLACEMENT.	BUILDERS.
*New York	8,150	William Cramp & Sons, Philadelphia, Pa.
*Columbia	7,475	William Cramp & Sons, Philadelphia, Pa.
Indiana	10,298	William Cramp & Sons, Philadelphia, Pa.
Massachusetts	10,298	William Cramp & Sons, Philadelphia, Pa.
Cruiser No. 13	7,475	William Cramp & Sons, Philadelphia, Pa.
*Texas	6,300	U. S. Navy Yard, Norfolk, Va.
Raleigh	3,183	U. S. Navy Yard, Norfolk, Va.
Amphitrite	3,990	U. S. Navy Yard, Norfolk, Va.
*Puritan	6,060	U. S. Navy Yard, Brooklyn, N. Y.
Cincinnati	3,183	U. S. Navy Yard, Brooklyn, N. Y.
*Terror	3,990	U. S. Navy Yard, Brooklyn, N. Y.
*Maine	6,648	U. S. Navy Yard, Brooklyn, N. Y.
*Monterey	4,048	Union Iron Works, San Francisco, Cal.
Cruiser No. 6	5,500	Union Iron Works, San Francisco, Cal.
*Monadnock	3,990	U. S. Navy Yard, Mare Island, Cal.
Torpedo No. 2 .....	.....	Iowa Iron Works, Dubuque, Ia.
Cruiser No. 9	2,000	Columbian Iron Works, Baltimore, Md.
Cruiser No. 10	2,000	Columbian Iron Works, Baltimore, Md.
Cruiser No. 11	2,000	City Point Works, Boston, Mass.
Gunboat No. 5	1,050	Bath Iron Works, Bath, Me.
Gunboat No. 6	1,050	Bath Iron Works, Bath, Me.
Harbor Defense Ram ..	2,000	Bath Iron Works, Bath, Me.
*Practice Cruiser .....	.....	Saml. Moore & Sons, Elizabethport, N. J.

*Launched, but not completed.

Following are the names of builders and crafts reported building during the past three months from various sources, but of which no reliable report could be had from the builders, although in each case the information was requested:

Fillmore A. Baker, Patchogue, L. I.—A 30-foot steam launch and four yachts of different rigs, of 6, 9, 10 and 12 tons respectively.

John Brooks, East Boston, Mass.—A 1,000-ton ship on stocks.

Bear Creek Ship Building Company, Bear Creek, Md.—A 75-foot tug, to be engined by E. J. Codd & Co., Baltimore.

H. D. Bendixsen, Eureka, Cal.—A 200-foot schooner.

Houghton Bros., Bath, Me.—Frames up for a schooner.

Neafie & Levy, Philadelphia, Pa.—Two 150-foot tugs for L. & W. Coal Company.

Kelly & Spear, Bath, Me.—A floating hotel steamer 100 feet long; several schooners on stocks.

Capt. McNevin, San Francisco, Cal.—A \$25,000 yacht.

Merrill & Stevens, Jacksonville, Fla.—Two small boats.

Matthews & Co., Eureka, Cal.—Steamer, 180 feet long.

Peoples' Iron Works, South Brooklyn, N. Y.—Floating elevator for Pennsylvania Railroad Company.

Hugh Ramsay, Perth Amboy, N. J.—Three tugs.

A. D. Story, Essex, Me.—Small schooner for Capt. Hodgdon.

I. L. Stone & Co., Rockland, Me.—A 300-ton schooner.

Sawyer & Son, Millbridge, Me.—Schooner on stocks.

C. G. Whitem, Oakland, Cal.—Two small steam lumber carriers.

Washburn Bros., Thomaston, Me.—A 500-ton schooner.

Yards at which nothing was reported building: E. G. Crosby, Bath, Me.; Dickie Bros., 54 Mission street, San Francisco, Cal.; Jackson, Sharp Co., Wilmington, Del.; Morse Brothers, Bath, Me.

(See page 19.)

MARINE REVIEW.

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

JOHN M. MULROONEY, } PROPRIETORS.
F. M. BARTON, }
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SUBSCRIPTION—\$2.00 per year in advance. Convenient binders sent, post paid, 75 cents. Advertising rates on application.

The books of the United States treasury department contain the names of 3,600 vessels, measuring 1,154,870.38 tons in the lake trade. In classification of this fleet the lakes have more steamboats of 1,000 to 2,500 tons than the combined ownership of this class of vessels in all other sections of the country. The number of vessels of 1,000 to 2,500 tons on the lakes on June 30, 1891, was 310 and their aggregate gross tonnage 512,787.58; in all other parts of the country the number of this class of vessels was, on the same date, 213 and their gross tonnage 319,750.84. The classification of the entire lake fleet is as follows:

Class.	Number.	Tonnage.
Steam vessels	1,592	756,751.53
Sailing vessels.....	1,243	325,131.06
Canal boats.....	703	72,515.42
Barges.....	62	20,472.37
Total.....	3,600	1,154,870.38

Tonnage built on the lakes during the past five years, according to the reports of the United States commissioner of navigation, is as follows:

	No. of boats.	Net Tonnage.
1887.....	152	56,488.32
1888.....	222	101,102.87
1889.....	225	107,080.30
1890.....	218	108,515.00
1891.....	204	111,856.45
Total.....	1,021	485,042.94

St. Mary's Falls and Suez canal traffic: Number of boats through St. Mary's Falls canal in 1890, 228 days of navigation, 10,557; tonnage, net registered, 8,454,435. Number of boats through Suez canal during 1890, full year, 3,389; tonnage, net registered, 6,890,014. Number of boats through St. Mary's Falls canal in 1891, 225 days of navigation, 10,191; tonnage, net registered, 8,400,685. Number of boats through Suez canal during 1891, full year, 4,207; tonnage, net registered, 8,698,777.

Entered at Cleveland Post Office as Second-class Mail Matter.

As a result of a suggestion in our last issue, that on some given day a review of lake vessels be given in connection with the attractions attending the World's Columbian Exposition at Chicago, there is presented on another page an expression of opinion on the subject from some of the most prominent men connected with the lake marine. The letters are mainly from vessel owners, ship builders and others in lake cities other than Cleveland, as it was decided from a canvass of local opinion by interviews that before proposing any definite plan for an undertaking of such importance it would be necessary to first secure an expression of opinion from all interests. The result is a collection of letters that at least present very interesting reading matter on the subject. All agree that the scheme would, as Gen. O. M. Poe says, "go far towards educating the people of the country generally to the great importance of our lake marine, and carry conviction as to the policy of fostering it in every possible way, particularly in regard to river and harbor improvements and ample aids to navigation." That such a display would also be a very interesting, enjoyable and instructive feature of the fair, there is no question, but the great cost, together with the disadvantages resulting from a huddling of the lake fleet, which must of necessity be scattered in its movements throughout the season, seem to be matters of first consideration that are entirely against any plans for a creditable show of the kind proposed. The objections to the project are of importance in showing that the magnitude of interests involved is the greatest obstacle. The collection of opinions is, however, worthy of further attention, and they may yet result in some plan being devised for a lake exhibit worthy of the great fair.

IN ADVANCE copies of his annual report just submitted to the secretary of the treasury, E. C. O'Brien, commissioner of navigation, says that in ten years from 1882 to 1892 our lake

tonnage increased from 711,269 tons to 1,183,182 tons. "This lake fleet," says the report, "now embraces large steam vessels, models of beauty and nautical efficiency, which offer to shippers and passengers an unsurpassed transportation service." The fact that lake shipping as a branch of the merchant marine of the country is, so far as it relates to the trade between American ports, absolutely protected against foreign competition is taken as a basis to show that while the tonnage of American-built vessels employed in the protected domestic trade of the country has advanced, the unprotected or foreign commerce branch of our merchant marine has declined from 75 per cent. of the total early in the century to 12 per cent. at present. The commissioner also presents other statistics to show that the measures of relief already adopted are not adequate to the restoration of American shipping engaged in foreign commerce.

DULUTH newspapers are now concentrating efforts to secure the construction of a tunnel between Minnesota point and the city, under the canal entrance to Duluth and Superior harbors. City authorities are again considering the question, and in view of the enterprise of the Zenith city it would not be surprising if this important project is undertaken shortly. In accepting the decision of the war department, that a bridge over the canal entrance would be an obstruction to navigation, and in turning attention to a tunnel, Duluth citizens have shown good judgment. Even though a tunnel may not be built to Minnesota point for some time to come, it will be the best means of communication in the end, and the city will lose none of the lake commerce, which has had most to do with its great progress in the past.

THAT the storm of last Friday and Saturday, especially on Lake Erie, was one of the most severe ever experienced on the lakes is shown in the action of such steamers as the Pontiac and Grecian, which left Cleveland in light trim just previous to the change of wind to the north. These boats are big steel ore carriers of high power but all efforts to keep them head to the wind and sea resulted in failure. They were turned and forced back to Cleveland on account of insufficient power to keep the bows headed into the seas, and not on account of an intention on the part of the masters to put back to port, as such an undertaking was hazardous in the extreme, and it is a wonder that the loss of life and property in cases of this kind was not greater than was finally reported as a result of the storm.

W. A. JELLICON, deputy collector of customs at Sault Ste. Marie under Collector E. B. Howard of Marquette, informs us that from Sept. 1 to Oct. 22 inclusive, there was collected in tolls at the St. Mary's Falls canal \$17,840.44 as a result of the retaliatory measures recently adopted by the United States government, on account of discrimination practiced by the Canadian government on the Welland and St. Lawrence canals. This amount is certainly not equal to the aggregate of extra tolls exacted on freight bound through the Welland to United States ports, but it will serve to partially equalize matters until a satisfactory settlement of the dispute can be had during the coming winter.

Mr. E. Platt Stratton, chief engineer surveyor for the American Shipmasters' Association, publishers of the Record of American and Foreign Shipping, is probably as well posted as anyone in this country on matters pertaining to the construction of ships. Lake vessel owners who met him during his recent visit to the lakes, in connection with the work of surveying three steel steamers now under way at the yard of F. W. Wheeler & Co., were very much impressed by conversations had with him on matters pertaining to ship building in general. Mr. Stratton was a member of the government board of local inspectors in New York for a number of years and was supervising inspector at the same port for two years.

A Great Ship Building and Dry Dock Plant.

By an expenditure equal to about one-third the original investment represented in the plant of the Detroit Dry Dock Company, Detroit, Mich., the capacity of the different works has been doubled, and the plant as a whole is now among the finest in the entire country. Improvements made recently by this company are mainly in the Dry Dock Engine Works, connected with the dry docks and wooden ship building plant at the foot of Orleans street, Detroit, but in describing these new shops and their machinery equipment it will not be out of place to note that the company now has under contract five big steamers and a small tug to be built for the opening of navigation next season at a total cost of \$1,365,000. Of the five big steamers, four are steel and are being built at the metal building works, in Wyandotte, a few miles below Detroit, from which works they are towed up the river at a trifling expense to the yards containing dry docks and engine works, as shown in the engravings on the two following pages. The capacity of the big dry docks and the metal and wooden ship yards of this company for the construction and repair of all kinds of vessels is fully understood by vessel owners, but improvements in the works for the construction of marine engines and boilers are of recent date and of great importance.

The new engine works have a frontage on three streets and are so constructed that great advantages in light and air are secured from an immense skylight and large windows extending the full height of the building. The construction is of steel and brick with fire-proof floors and roof. The entire building is 200 feet long, 66 feet wide and 50 feet in height. The main shop for the erection of engines and for heavy machinery runs the full length and height of the building and is 37 feet 3 inches in width. From this main floor space there is a lean-to 26 feet 6 inches in width, which also runs the full length of the building, and which is divided into three floors, the first, or ground floor, being used for power purposes and for heavy machinery, the second for light machinery and for bench work and the third for the storage of patterns. An elevator affords ready access to all of these floors, or galleries, and there is an abundance of light and air from the fact that there are no partitions between them and the main shop space, while the facilities for the transmission of power and the handling of material by a large electric crane in the main shop are most complete.

One end of the main structure is reserved for the erection of machinery, and the space devoted to this purpose admits of four of the largest triple expansion engines being put up at one time. At the other end of this main portion of the building the large tools are so arranged that work from them can be readily transferred with the least possible difficulty by means of a 20 ton Shaw electric crane, which runs the whole length of the building, and which can be applied to heavy work in the galleries as well as in the main shop. This crane has 37 feet span and the space from the floor to the crane hook is 36 feet. A scale attached to the crane will weigh any amount from a few ounces to twenty tons, so that in accepting forgings and other articles of outside manufacture the company has its own weights. Among the big tools in the main shop are the following: a planer capable of planing 72 inches square in the clear; a 48 inch double head planer; 120 inch lathe, 24 feet between centers; wall planer, capacity 14 x 20 feet; a 96 inch lathe; 30 inch stroke slotting machine; 18 inch stroke slotting machine; 36 inch lathe; 48 inch lathe; 60 inch boring mill; two radial drills and a vertical suspension drill. On the first gallery there are three small planers and seven small lathes of various sizes, two shapers, three vertical drills and a bench 75 feet long for vice work. On this floor is located also the electric generator for the operation of cranes and the electric light plant. The upper gallery, on third floor of the side structure, now devoted to the storage of patterns, etc., can be readily equipped with machinery when additional work requires it, and a

new building can be put up on the spacious premises of the company for storage purposes. That portion of the old engine works not taken up by the new building has been utilized for the manufacture of patterns, for store rooms and for offices for the foremen of the different departments of the engine and boiler works.

Beam engines for the two big side wheel steel steamers being built by this company for the Detroit and Cleveland Steam Navigation Company will be constructed by the W. & A. Fletcher Company of New York, who make a specialty of such work, but notwithstanding this the Detroit works now have contracts for six engines aggregating about 9,200 horse power. These are two of the compound type for the Mackinaw car ferry, the cylinders of the engine intended for service in the forward part of the boat being 28 and 54 inches by 40 inch stroke and the aft engine 30 and 56 inches by 48 inch stroke; two triple expansion engines, duplicates, with cylinders 22, 35 and 56 inches by 44 inch stroke, one of which is for the Eddy Bros. steamer, now about ready for launching, and the other for a duplicate vessel, for which a contract has just been closed with Capt. E. M. Peck and others; one triple expansion engine for the New York Central steamer, with cylinders 27, 37 and 62 inches by 48 inch stroke, and one small tug engine 16 by 18 inches. All of this machinery is to be in readiness for the opening of navigation next season, and there is no doubt that this work and even more that may yet be taken under contract can be cared for in the new establishment.

Without the improvements here referred to, there has been built in the Dry Dock Engine Works within a period of about a year ending with last month, engines having a combined horse power of a little more than 10,000. These were five sets of triple expansion type, all duplicates, of about 1,500 horse power each; one compound for the steamer W. B. Morley; a three cylinder non-condensing engine for the Detroit river ferry steamer Promise, and a triple expansion engine, with cylinders 16, 24 and 38 inches by 24 inch stroke for the passenger steamer Wyandotte.

Improvements in the boiler building works connected with this plant, which will receive attention in a later issue, are of equal importance.

The new boiler works is 180 feet long, 70 feet wide and 50 feet in height. This works is also equipped with a 20-ton electric crane, riveting tower 50 feet in height, a 25-ton radial hydraulic crane and a 100-ton hydraulic riveting machine, all of which will be described with more detail in reference to the boiler building plant.

One of the greatest features of these works for economy and rapid handling of material of all kinds is the close connections established between the dry docks and ship yards and the engine and boiler shops. Railway tracks run into the yards and buildings, connecting the different departments with the river front and docks, from which vessels recently launched or needing repairs can be reached with the least possible trouble or expense.

An immense shear-legs for putting boilers or machinery aboard boats and for repair work of all kinds is located on the dry dock premises adjoining the engine and boiler works, and just now there is under construction in one portion of the river front property the second big car ferry steamer and ice crusher for service in the Straits of Mackinac. This boat, which will cost \$300,000 and have engines of 4,000 horse power, is in itself a subject of great interest. No less than 2,000,000 feet of timber will enter into her construction. She is probably the most wonderful ferry steamer building any place in the world, as to power and stability. She will go into service this winter and will make regular trips through ice from two to three feet thick. She is the largest wooden craft on the lakes.

These spacious buildings, with their massive structural iron frames, were put up by the Berlin Iron Bridge Company of East Berlin, Conn., and nearly all of the heavy tools which they contain were furnished by Bement, Miles & Co., of Philadelphia, Pa.

DRY DOCK ENGINE WORKS, DETROIT, MICH.



GENERAL VIEW OF PLANT.

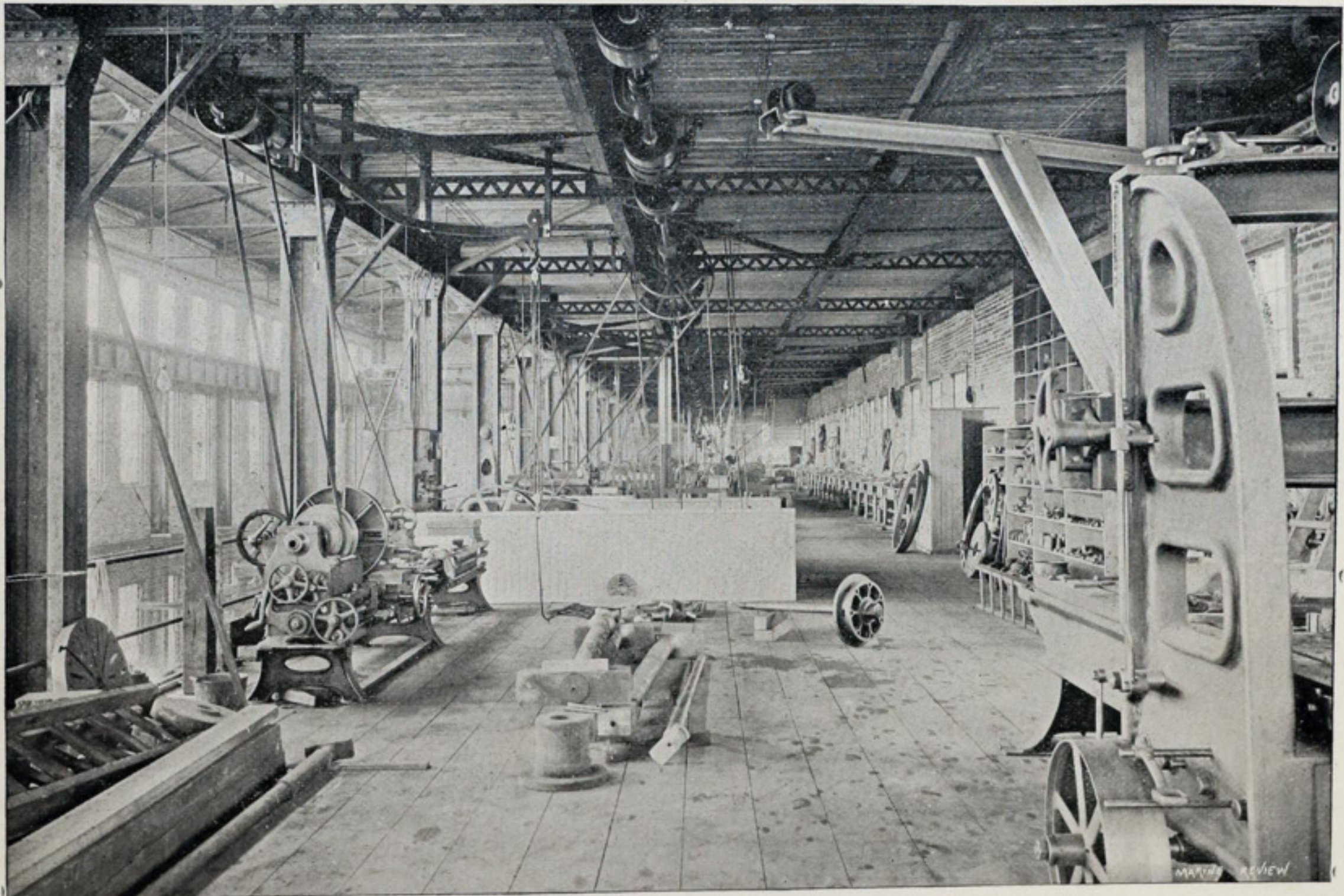


EXTERIOR VIEW OF ENGINE WORKS.

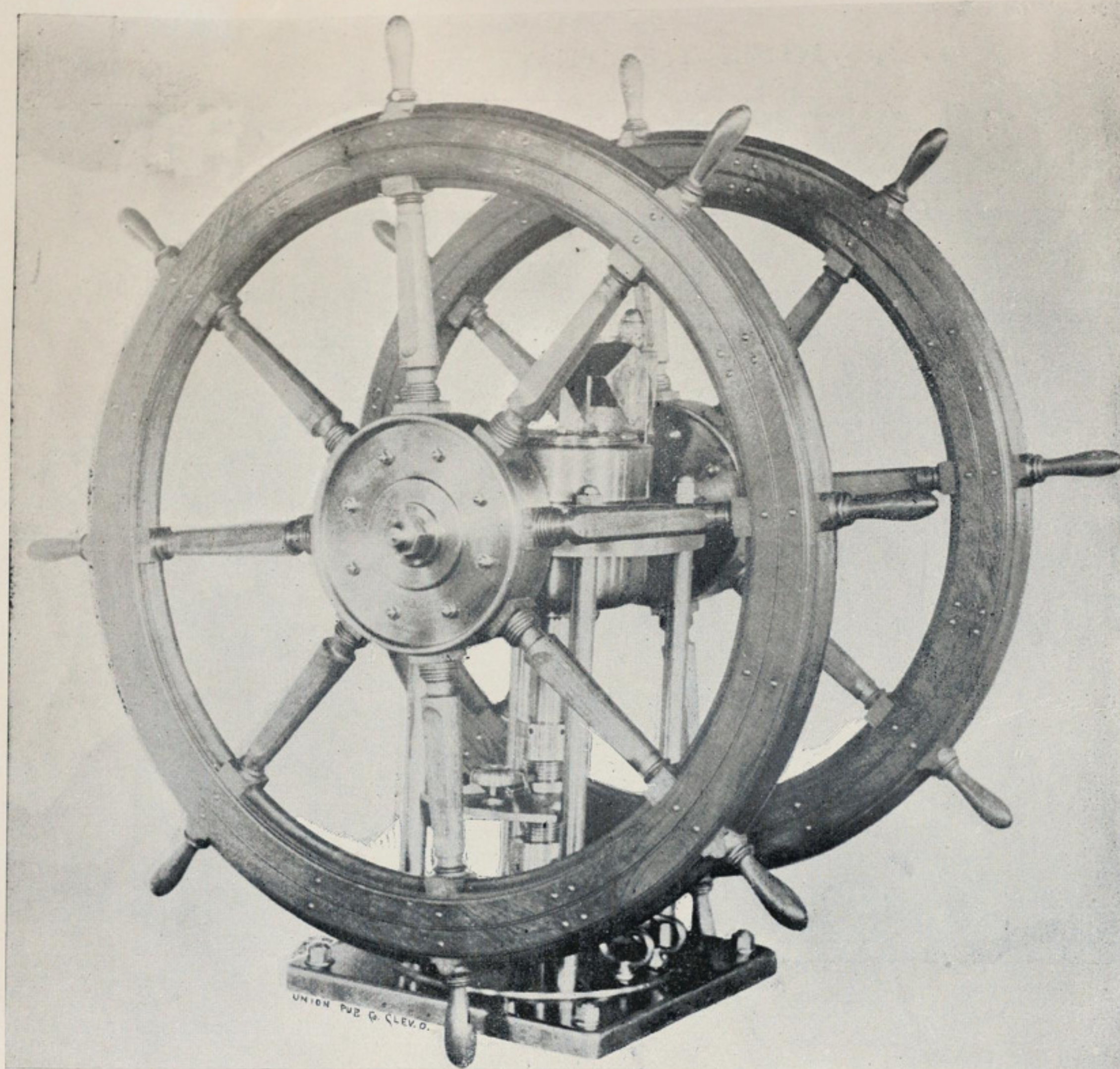
DRY DOCK ENGINE WORKS, DETROIT, MICH.



INTERIOR VIEW OF ENGINE WORKS.



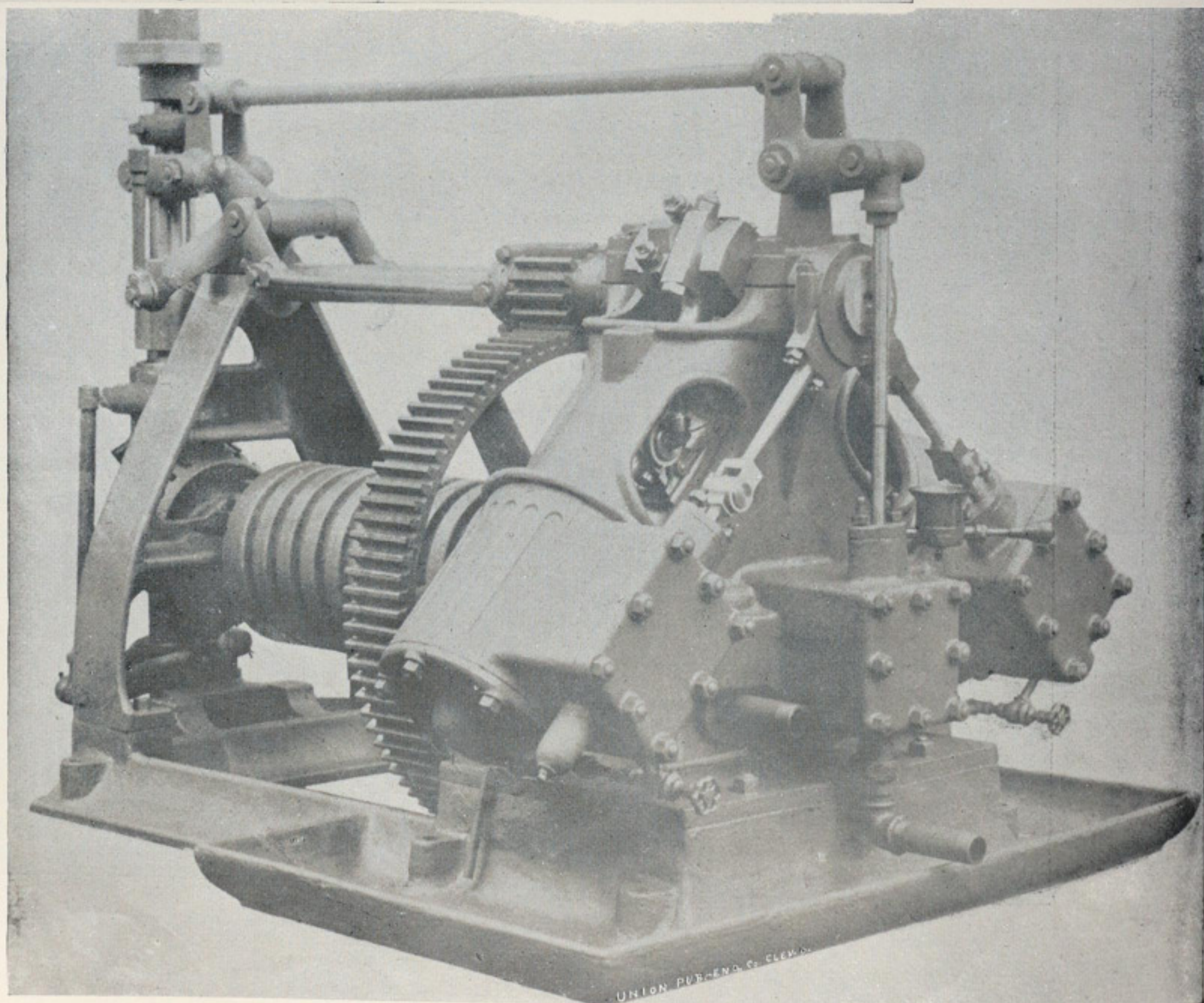
FIRST GALLERY IN ENGINE WORKS.



THE
 "GLOBE"
 PATENT
 STEAM
 STEERING
 ENGINE.

COMBINED STEAM
 AND HAND
 STEERING.

PATENTED JANUARY 7, 1890.



—BUILT BY—
 THE
 GLOBE
 IRON
 WORKS
 COMPANY,
 CLEVELAND, O.

FOR DESCRIPTION

SEE PAGE 17.



Arthur Orr is the name given to the steamer building at the yard of the Chicago Ship Building Company for Elphicke and others of Chicago. The schooner launched Saturday at West Bay City by Capt. James Davidson is named Dundee.

On or about the 18th inst. the last boat of the Northern Steamship Company's line will leave Cleveland for Duluth and Superior. Freight intended for shipment by this line must be in possession of the company not later than the 15th inst.

On her last trip to Marquette the steamer Continental with her consort the Grace Holland, passed up St. Mary's river by night. The run was made without difficulty, as the ranges were found to be all right. This is the first time the feat has been attempted by a steamer towing a consort.

A third slip and docks for handling coal and ore in the old river bed portion of the Cleveland harbor will be constructed this winter by the Pennsylvania Company, which operates the Cleveland & Pittsburgh Railway. The slip and docks will be built according to the plan under which two new slips were recently constructed.

During her cruise of nine months in different parts of the world the steel steam yacht Wadena, which left the yard of the Cleveland Ship Building Company late last fall and is now on her return up the Canadian canals from the Atlantic, did not meet with a single accident to her machinery. Not even so much as a hot journal marred the voyage, and with a little over 1,000 tons of coal, she accomplished 29,067 miles.

In October the record of coal shipments out of Buffalo for any one month was beaten, the amount carried by lake being 546,523 tons, against 354,508 in October, 1891. In September of this year shipments were 377,562 tons, and for the season to Nov. 1 they are 2,344,432 tons, against 1,977,878 for the same period last year. Shipments are already ahead of those for the entire year of 1891.

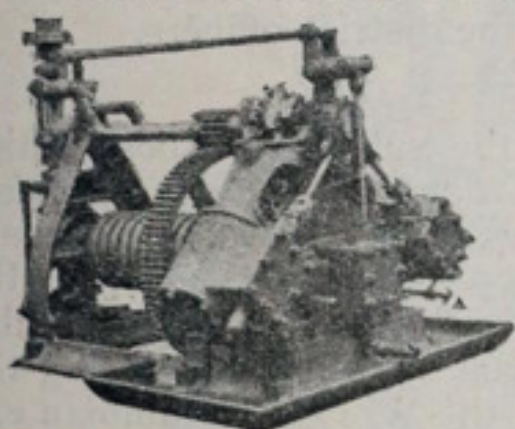
Trade Notes.

During Columbus week the flag manufactory of De Grauw, Aymar & Co. was taxed to its utmost, until there was not another piece of bunting to be had in the United States. There is not a sea, river or lake port that this old established ship chandlery firm do not sell more or less in this line.—Marine Journal.

In describing Cornfield point light vessel built by F. W. Wheeler & Co., West Bay City, Mich., Industries of London says: "A peculiar feature of these vessels is their centre hawse-pipe made at an angle of 45 degrees through the stem, to reduce the stress on the cables when riding in heavy seas. The heaviest cables are 2½ inches in diameter, the others 2 inches, and 250 fathoms have been supplied. These cables are worked by a steam windlass, constructed by the American Ship Windlass Company, Providence, R. I.

The "Globe" Patent Steam Steering Engine.

COMBINED STEAM AND HAND STEERING, PATENTED JAN. 7, 1890.



IT IS THE most compact engine and gear on the market, requiring only 5½ feet forward and aft and 4 feet athwartships. The wheel is 4½ feet in diameter outside the rim and 5½ feet including the spokes.

The steerer is self-contained, the base forming a drip pan and having outer bearings, complete, all ready to bolt down to deck.

The engine has two steam cylinders, 7-inch bore by 6-inch stroke, and is geared to drum shaft with a ratio of six to one.

All the working parts are adjustable for wear, and provision is made for taking up all lost motion.

The gears are cut and work almost noiselessly.

All parts of the valve motion are connected to the engine direct, are made as simple as possible and are positive in their movements; they are not affected by the springing of decks.

The steam chests, valve stems and piston rods are all in plain sight and easy of access.

The valves are of the slide pattern and will always remain tight.

The drum is grooved for chain and the chains are led either above or below the drum (depending on which deck the engine is placed) and to the ship's side, thence running aft and connected to sliding blocks, or to the usual hand steering purchase.

In the wheel house are placed two large steering wheels, coupled together, either of which can be used to steer by steam or by hand, and there is no clutching or unclutching of wheels when changing from one motion to the other—they are always ready.

The change from steam to hand, or vice versa, can be made instantly in the wheel house and there is no danger of blocking as the shifting parts can not foul each other or break the engine.

The motion for steering by steam or by hand is conveyed through the one upright shaft, thus making the steerer complete in itself without a complication of rods, rope belts, etc.

The movement of the steering wheels one-sixteenth of a spoke will start the engine, which movement is sufficiently close to steer by steam at sea. To move the rudder from hard-over to hard-over the engine makes from forty to fifty revolutions, using 35 pounds steam pressure, and at this speed the steerer has ample power to put the rudder in any position at the maximum speed of vessel, and as there is no racing backward and forward, it will not wear itself out or consume large quantities of steam.

Complete arrangements for oiling are provided and at accessible points.

The indicator is located at top of wheel stand, works positively by gearing and is not liable to become disarranged.

A small binnacle lamp is placed on the wheel stand, throwing light on the indicator but in no way interfering with the lights in the binnacle box.

Automatic stops and a signal bell are provided for the purpose of checking the movement of the wheel and warning the wheelsman at hard-over positions of the rudder.

The machine is connected up complete and tested before leaving the works. The entire apparatus is compact in design, thoroughly and substantially built of the best materials, has a neat and attractive appearance and is in all respects the most successful steering machine now upon the market. Not the least of its merits is its almost absolute freedom from noise in operation.

Over one-fifth of all the boats built on the lakes during the last three years have been equipped with the Globe steam steering gear.

Over one-eighth of all the 1,000 to 2,500 ton steamers on the lakes are equipped with Globe steam steering gear, and 61 per cent of all that class of vessels of the United States are owned on the lakes.

The tonnage of the steamers having Globe steam steerers amounts to about 65,000 tons.

Following is a list of them, and it will be noticed that it includes the very best class of lake steamers:

J. H. Devereaux,	Saxon,
W. H. Wolf,	German,
Fred Pabst,	Briton,
Ferd. Schlesinger,	Marina.
Cambria,	Masaba,
J. H. Outhwaite,	Virginia,
Ira H. Owen,	Ionia,
Corsica,	Maritana,
Wallula,	Mariposa,
Caledonia,	Schuykill,
Corona,	Samuel Mather,
North Wind,	Uganda,
Italia,	Pathfinder,
Vulcan,	Samuel Mitchell,
Parks Foster,	City of Genoa,
Castalia,	City of Naples,
St. Lawrence,	City of Venice,
Hiram A. Sibley,	George T. Hope,
Norman,	Roumania.
Republic,	

A smaller size, suitable for small steamers, tugs, etc., can now be furnished. One of this type will be placed on the United States light-house steamer Maple, building at Elizabeth, N. J.

For particulars of construction, sizes and prices of these steering engines address The Globe Iron Works Company, Cleveland, O.

Iron Mining.

VALUE OF LEADING STOCKS.

Quoted by Chas. H. Potter & Co., No. 104 Superior St. Cleveland, O.

Stocks.	Par Value.	Bid.	Asked.
Cleveland-Cliffs Iron Company.....	\$100 00	\$.....	\$ 63 00
Champion Iron Company.....	25 00	.....	58 00
Chandler Iron Company.....	25 00	.....	46 00
Jackson Iron Company.....	25 00	.....	75 00
Lake Superior Iron Company.....	25 00	40 00	42 00
Minnesota Iron Company.....	100 00	70 00	75 00
Pittsburgh & Lake Angeline Iron Co.....	25 00	.....	145 00
Republic Iron Company.....	25 00	10 00	12 00
Ashland.....	25 00	.....	.....
Section Thirty-three.....	25 00	.....	5 00
Brotherton.....	25 00	2 00	2 50
Iron Belt.....	25 00	2 00	2 50
Aurora.....	25 00	8 25	.....

Following are some figures now given out by promoters of Mesaba range properties regarding mines under contract to ship next year, together with royalties and minimum ore output:

	Royalty.	Advance Royalty.	Minimum output, gross tons.
Cincinnati.....	\$0 55	\$25,000	150,000
Biwabik, (P. L. Kimberly)....	50	.....	300,000
Biwabik (Berringer).....	50	.....	*100,000
Virginia.....	50	25,000	50,000
Wyoming (A. J. Decker).....	30	40,000	25,000
Wyoming (J. T. Jones).....	50	.....	25,000
New England (N. D. Moore)...	55	50,000	150,000
New England (Weimer).....	55	25,000	50,000
Lone Jack.....	65	.....	50,000
Mesaba Mountain.....	65	75,000	400,000
Ohio.....	60	.....	150,000
Hale.....	45	.....	50,000
Wyoming (Parkersburg Iron Company).....	50	30,000	50,000
Total			1,500,000

* This amount first year and 50,000 tons second year.

Stevenson Burke is president of the Standard Ore Company and H. P. Barbour, F. A. Bates, Henry W. Oliver and A. D. Thomson are among the directors. This company now controls the Cincinnati and Hale properties, Mesaba range, and is negotiating with the Homestead Iron Mining Company for a lease of another forty acres, on a guarantee of \$5,000 advance royalty and a minimum output of 30,000 tons at 40 cents a ton. Another Mesaba lease recorded recently gives the Virginia Iron Company the right to mine ore on a tract of land owned by the C. N. Nelson Lumber Company. The lumber company retains the timber rights and is to receive 30 cents a ton royalty on all ore mined.

Within a few days track laying on the Huron Bay Railway will be completed from the new port on Lake Superior to Champion, Mich. The company has made a bid for hauling the ore of the Champion mine next season and expects to get the work.

Shipments of iron ore from Two Harbors up to and including Wednesday, Oct. 26, aggregated 1,072,560 gross tons, of which 610,499 tons were from the Chandler, 446,606 tons from the Minnesota, 2,525 tons from the Pioneer and 12,930 tons from the Zenith mine.

Lloyd's Supplement for November.

New tonnage in the Inland Lloyd's Register for the last month of navigation makes quite a good showing. There are eleven vessels having a net tonnage of 7,427 tons and a valuation of \$854,000. The two 261-foot car ferries, built to carry loaded cars across Lake Michigan, the new wooden steamer Morley, very much like the St. Lawrence, two schooners built at Davidson's West Bay City yard and two more McDougall barges are most important among the new craft. The list with tonnage and valuation follows:

NAME.	PORT OF HAIL.	OWNERS.	NET TONNAGE.	VALUATION
Ann Arbor No. 1....	Toledo	T. A. A. & N. M. R. R. Co	564	\$200,000
Ann Arbor No. 2....	Toledo	T. A. A. & N. M. R. R. Co	564	200,000
Wm. B. Morley	Marine City.....	Morley	1,565	125,000
William D.....	Ashtabula	Downs.....	26	12,000
Perfection	Bay City.....	Jas. Davidson	*40	15,000
Sunol.....	Ashtabula	Downs.....	31	12,000
Aberdeen	Bay City.....	Davidson Trans. Co.....	994	50,000
Dundee	Bay City.....	Davidson Trans. Co.....	995	50,000
Loretta	West Bay City	Clifford C. Brooks.....	312	10,000
Barge No. 126.....	Buffalo.....	American Steel Barge Co.....	1,168	90,000
Barge No. 127.....	Buffalo.....	American Steel Barge Co.....	1,168	90,000
			7,427	\$854,000

*Estimated.

Lake Carriers' Association.

M. A. BRADLEY, President.

VICE-PRESIDENTS: { James W. Millen, Detroit, Mich. John G. Keith, Chicago, Ill.
Frank J. Firth, Erie, Pa. W. S. Brainard, Toledo, O.
Thomas Wilson, Cleveland, O. R. P. Fitzgerald, Milwaukee, Wis.
Peter F. Miller, Buffalo, N. Y. Alex. McDougall, Duluth, Minn.
Charles H. Keep, Secretary, Buffalo, N. Y. Geo. P. McKay, Treasurer, Cleveland, O.
Harvey D. Goulder, Counsel, Cleveland, O.

LIFE SAVING STATION AT "DEATH'S DOOR."

As a result of numerous accidents in the vicinity of "Death's Door," entrance to Green bay, Lake Michigan, an effort will be made by the association to secure the establishment of a life saving station on Plum island. The nearest life saving station to this dangerous locality is the one at Sturgeon bay canal about forty miles distant. On the night of Oct. 17 the steamer Gilmore went ashore on Pilot island in this vicinity and is a total loss, and the steamer Merrimac of the Inter-Ocean Transit Company's line went on Nine-Foot shoal at the same time. The boats were running for shelter from a south-east gale. The Merrimac was compelled to throw overboard 300 tons of ore before she was floated. Again in the storm of last week the schooner A. P. Nichols went onto Pilot island and if released it will be with great difficulty. There are now three wrecks on Pilot island, two on the middle ground back of Plum island and two on South Fisherman shoal, east of Washington island. Four of these have been stranded since last fall.

PROPOSED DREDGING AT "COLLISION BEND."

Acting Secretary of War L. A. Grant gives the vessel owners little encouragement regarding their request that a small portion of the money appropriated for St. Mary's Falls canal and approaches be applied toward widening the channel by dredging in that portion of the St. Mary's river where the steamer Peck was sunk and where several accidents have since occurred. He submits in connection with a recent communication a letter from Gen. Poe, in which that officer admits that there is great necessity for the proposed improvement. He says, however, that dredges now employed on the St. Mary's river are employed on specific contracts and can not be diverted to this work. Even if dredges were available, he is of the opinion that the use of any portion of the funds now available would be inadmissible, except under the greatest emergency, such as existed when the channel was completely blocked by the sinking of the Peck. Nothing will be done this fall, and unless the association makes a special effort toward securing funds before next spring this channel will remain a menace to navigation throughout next season. Congress at its session this winter might be induced to pass a law diverting a small portion of the canal or Hay lake funds to this improvement.

PILOT ISLAND LIGHT.

At the last meeting of the financial committee of the association, a communication was received from Capt. William Nicholson of Chicago, asking that the light on Pilot island, Lake Michigan, be changed from a fixed red to a fourth order fixed white, with a 15-second white flash. In January last the board ordered this change, to take effect immediately prior to the establishment of the Plum island ranges. Unfortunately, no appropriation was secured at the last session of congress for these Plum island ranges and the change has not been made. The matter has again been taken up with the light-house board, however, and Secretary Coffin of that board informs the association that it is now in the hands of the district officers.

Mr. George Baker, inventor of the sub-marine boat which has attracted a great deal of attention at Detroit during the past summer, is having the boat taken to Chicago in order to secure advantage in his experiments from deep and clear water within the breakwater. Mr. Baker's home is in Chicago, and it is also probable that he intends to derive some benefit from having the boat in operation during progress of the World's Columbian exposition.

ST. MARY'S RIVER CHARTS NOS. 1 AND 2 FROM POINT IROQUOIS TO E. NEEBISH AND FROM MUD LAKE ENTRANCE TO E. NEEBISH, CORRECTED TO AUG. 30, 1892, CAN BE HAD AT THE OFFICE OF THE MARINE REVIEW, 516 PERRY-PAYNE BUILDING, CLEVELAND, FOR 20 CENTS EACH, OR BOTH BY MAIL FOR 50 CENTS. BOTH CHARTS WILL BE FURNISHED WITH CLOTH BACKS AND BOUND EDGES FOR \$1.

Notes from Lake Ship Yards and Engine Works.

One of the whaleback tow barges included in the list of new vessels was launched on Saturday last but will not go into commission, of course, until next season.

The steamer William B. Morley, built at Marine City, which is now on her first trip, is practically a part of the tonnage to be credited to the additions to the lake fleet next spring, but she is not included in the list.

The Selwyn Eddy, "straight back" steamer building at the Wyandotte yard of the Detroit Dry Dock Company, will not be launched on Saturday as was expected.

Capt. Thomas Wilson and others of the Wilson Transit Company, Cleveland, have purchased from the Cleveland Ship Building Company the large freight steamer of monitor type, upon which work was begun recently. As shown in the list of new vessels this steamer is 340 feet over all, and is expected to carry 3,600 tons. She will have triple expansion engines and two boilers of Scotch type.

S. F. Hodge & Co. of Detroit are just finishing work on machinery of the second car ferry building at Toledo for service on Lake Michigan in connection with the Toledo, Ann Arbor & Northern Michigan Railway, and will shortly begin shipping to West Superior the machinery for the new world's fair passenger boat building at the yard of the American Steel Barge Company. The Cleveland Ship Building Company is well along with work on the contract for six boilers, smoke stack and furnaces for the same boat. The smoke stack is 11 feet in diameter.

In nearly all of the big steamers of which detail is given the power will be furnished by triple expansion engines. The engines of the world's fair boat, building by S. F. Hodge & Co. of Detroit for the American Steel Barge Company, will have cylinders 26, 42 and 70 inches by 42-inch stroke and will develop 3,000 horse power, while the twin sets for the Great Northern passenger steamers, being built by the Globe company, of Cleveland, will develop 6,000 horse power each. The beam engine for the Niagara Navigation Company's sidewheel steamer, which is being built by the Hamilton Lridge Company, will be furnished by the W. & A. Fletcher Co. of New York. This company will also furnish engines for the two side-wheel steamers being built by the Detroit Dry Dock Company for the Detroit & Cleveland Steam Navigation Company.

NEARLY EVERY SHIPBUILDER ON THE LAKES HAS BEEN FURNISHED WITH PATTERSON'S NAUTICAL DICTIONARY AND NO SHIPBUILDER SHOULD BE WITHOUT IT. THE DIAGRAMS OF WOODEN, IRON AND STEEL VESSELS AND MARINE ENGINES IN IT ARE ALONE WORTH THE PRICE OF THE BOOK. IT WILL BE SENT TO ANY ADDRESS FOR \$5, OR THE DICTIONARY AND THE MARINE REVIEW, ONE YEAR, \$6. WRITE TO MARINE REVIEW, 516 PERRY-PAYNE BUILDING, CLEVELAND, O.

Stocks of Grain.

The following table prepared from the Chicago Board of Trade report of the visible supply of grain on Saturday the 29th inst., shows with comparisons stocks of wheat and corn in store at points of accumulation important to the lake traffic:

	WHEAT, BUSHELS.		CORN, BUSHELS.	
	Oct. 29, '92.	Oct. 22, '92.	Oct. 29, '92.	Oct. 22, '92.
Chicago.....	9,525,000	8,967,000	6,843,000	6,355,000
Duluth.....	5,449,000	4,977,000	.....	.....
Milwaukee.....	1,739,000	1,517,000	9,000	10,000
Detroit.....	1,070,000	1,026,000	34,000	34,000
Toledo.....	3,741,000	3,672,000	262,000	255,600
Buffalo.....	3,064,000	2,609,000	636,000	871,000
New York.....	14,460,000	13,993,000	1,992,000	1,697,000
Baltimore.....	2,146,000	2,003,000	459,000	305,000
Philadelphia...	1,863,000	1,696,000	227,000	208,000
Boston.....	144,000	114,000	343,000	241,000
Montreal.....	508,000	398,000	33,000	18,000

The statement shows that at five lake shipping ports, Chicago, Duluth, Milwaukee, Detroit and Toledo, there is an increase at all points for the week of 1,365,000 bushels of wheat and a net increase of 493,400 bushels of corn, while at Buffalo and the five principal exporting ports on the seaboard, New York, Baltimore, Philadelphia, Boston and Montreal, there is an increase at all points in wheat of 1,372,000 bushels and in corn 350,000 bushels.

Notices to Mariners.

On or about Nov. 10, 1892, a fixed white light will be shown from a lens lantern, suspended from a post, about 15 feet above lake level, on the outer end of the west pier at Conneaut, Lake Erie. The light will be visible in clear weather about 5 statute miles.

Commander E. T. Woodward in charge of the tenth light-house district gives notice that the removal for the winter of the buoys in that portion of the tenth district embraced by Lake Erie and the Detroit river will begin about Nov. 10 and probably be completed by Nov. 30. Small scantling buoys will be left to mark the more important stations, as usual, in place of the buoys removed. The buoys in the Niagara river and in the harbor of Buffalo will be left in position as long as possible, and on their removal no small buoys will be left in these localities.

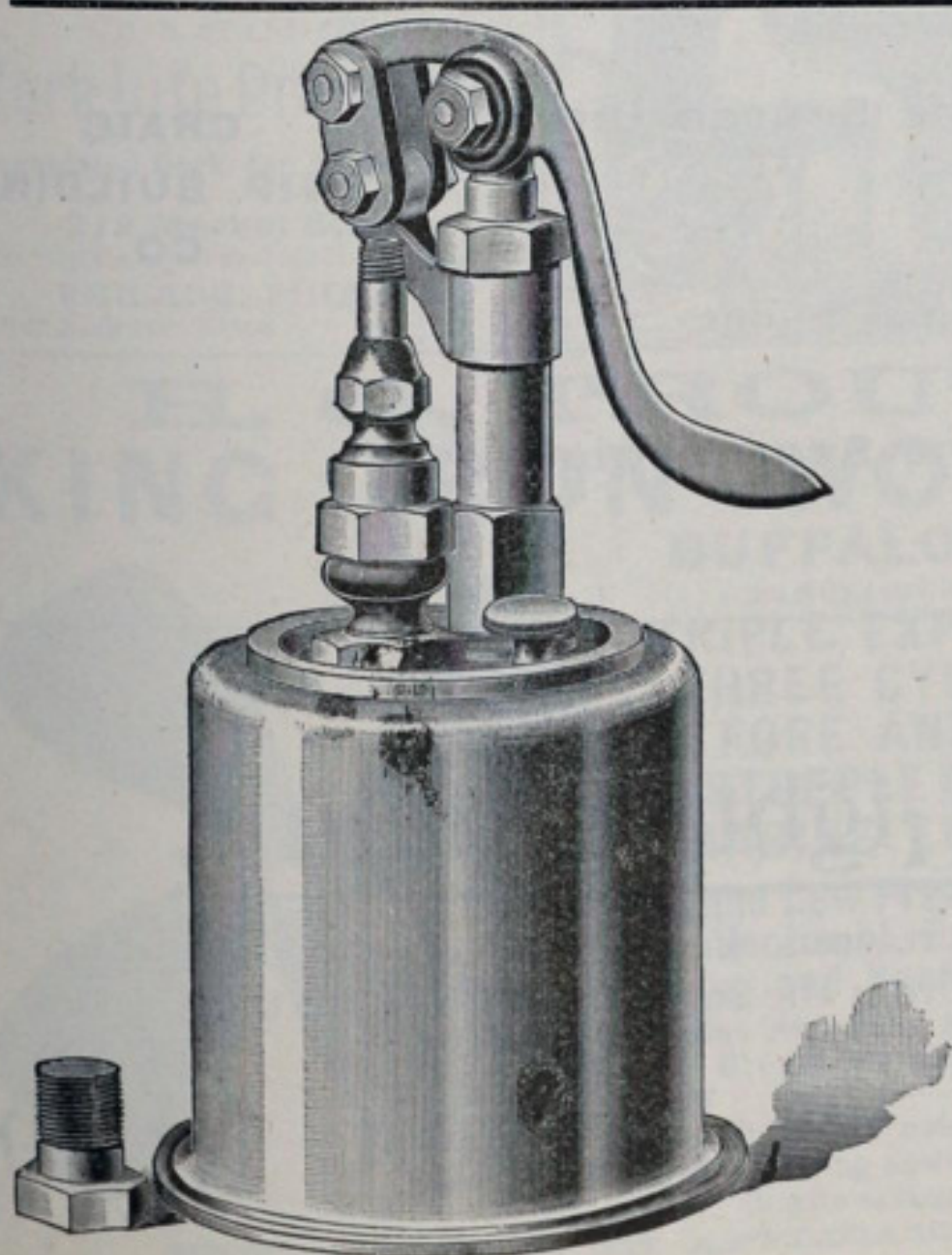
NO MASTER SHOULD ATTEMPT TO RUN THE SAULT RIVER WITHOUT CHARTS NOS. 1 AND 2, CORRECTED TO AUG. 30, 1892. THEY WILL BE FURNISHED AT COST AT THE OFFICE OF THE MARINE REVIEW OR MAILED TO ANY ADDRESS. FOR \$1 WE WILL HAVE THEM BOUND AND BACKED WITH CLOTH, AND MAILED TO ANY ADDRESS.

WANTED.

A Good Second-Hand MARINE BOILER,

Good for at least 100 Pounds Steam, for use in a Steambarge.

Address, MARINE REVIEW,
516 Perry-Payne Bldg., Cleveland, O.



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24 CENTER STREET,

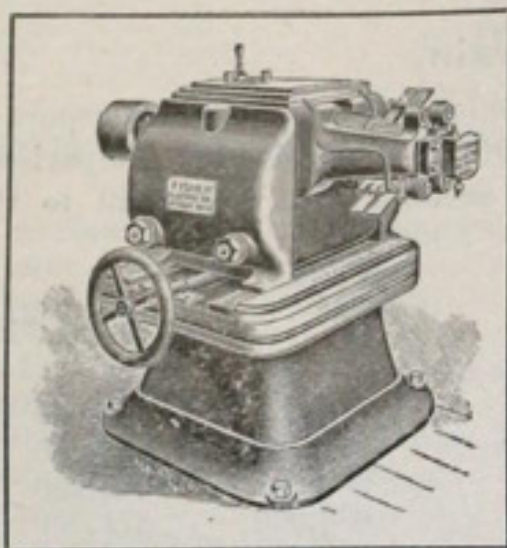
Cleveland, O.,

MANUFACTURERS OF

Oil Pumps, Large Steam Whistles,

Brass Railings,

And ALL KINDS OF BRASS WORK, Regular or Special,
used by Engine or Boat Builders.



We have CLOSED CONTRACTS for
THE FOLLOWING
STEAMERS THIS FALL:

City of Alpena.

300 Lights.

Two direct connected Twin Sets.

City of Mackinac.

300 Lights.

Two direct connected Twin Sets.

Thomas Maytham.

150 Lights.

One direct connected Twin Set.

Arthur Orr.

150 Lights.

One direct connected Twin Set.

CHICAGO
SHIP BUILDING
CO.

Ann Arbor No. 1.

150 Lights.

One direct connected Set. One Search Light.

Ann Arbor No. 2.

150 Lights.

One direct connected Set. One Search Light.

CRAIG
SHIP BUILDING
CO.

IF YOU WANT your Steamer equipped with an

Automatic Incandescent Lighting Plant,

Which can be handled by an engineer without any previous knowledge of electric plants, and which will operate arc and incandescent lamps from the same dynamo, write the

Fisher Electric Company, Detroit, Mich.

PATENT ADJUSTABLE
BINNACLE AND COMPASS
 For PILOT HOUSES.

With Directions for Adjustment.

Send for Circular.

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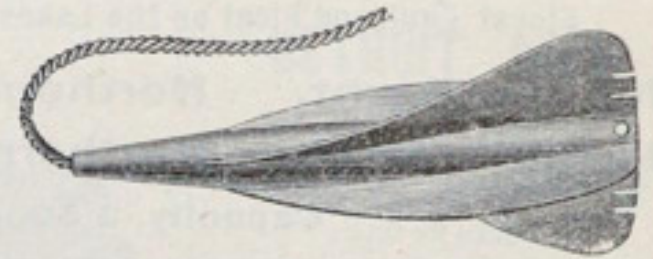
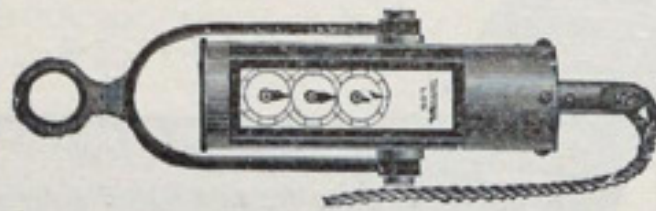
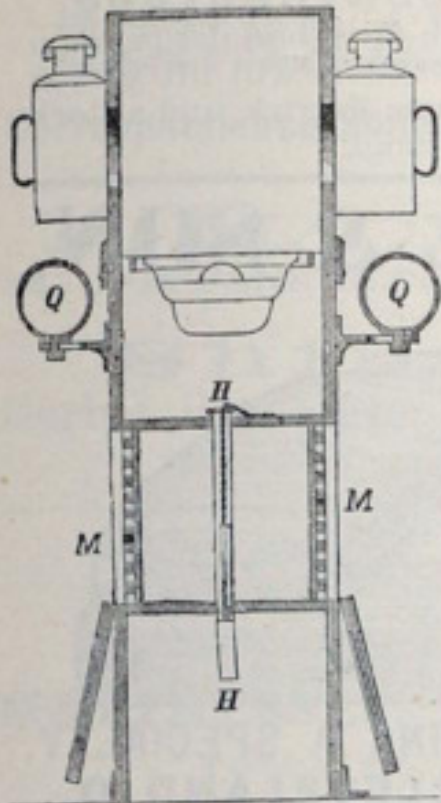
With Adjustable ROTATOR.

BEST LOG IN THE MARKET.

THOUSANDS IN USE.

MANUFACTURED BY

JOHN BLISS & CO., 128 FRONT STREET, NEW YORK.



MARINE REVIEW LINER EXCHANGE.

Space under this heading may be used gratis by our advertisers or subscribers to call attention to vessels or any craft, machinery, new or second hand, that they may have for sale. Those wanting machinery of any kind or wishing to purchase vessels, are invited to take advantage of the same offer. Employers in need of professional men or men who want positions may avail themselves of the opportunities offered. Each item will be limited to three lines. Letters concerning same must mention number attached to item and be addressed MARINE REVIEW, 516 Perry-Payne Building, Cleveland, O.

147—FOR SALE—At a bargain, small cruising yacht, keel and sloop rigged. Suitable cabin and boat generally in good condition.

148—WANTED—Master's position on good steambarge. References given on application.

149—WANTED—Pair swinging engines, second hand, not smaller than 6x6 cylinders; for dredge.

150—WANTED—A responsible man to take an interest in a new marine invention; nothing like it in the market.

151—FOR SALE—2 10 by 10 engines, wheels, shafts 3½ inches, link motion; and boiler 42 inches by 10 feet 6 inches marine, 80 pounds steam.

152—FOR SALE—Dredge, 1½ yard dipper, good power, 130 feet steam.

153—FOR SALE—One Lighter, 100x20x5, four years old.

154—FOR SALE—Yacht, 32 feet long, 6 beam, 4 deep. Engine 6 x 6. Boiler upright; 130 lbs. steam. To be had for \$400.

155—FOR SALE—A 17x20 High Pressure Marine Engine—very cheap.

156—FOR SALE—At a bargain, 30-foot sloop yacht, built this year and in first-class condition.

Keystone Cork Works.

ALFRED L. BUTZ,

Importer and Manufacturer of

Machine Cut CORKS,

U. S. STANDARD

Cork Life Preservers

Granulated Cork for Refrigerators.

212 Market Street,

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 SPECIAL WESTERN
 4 RELIABLE WESTERN
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 SEND FOR CATALOGUE
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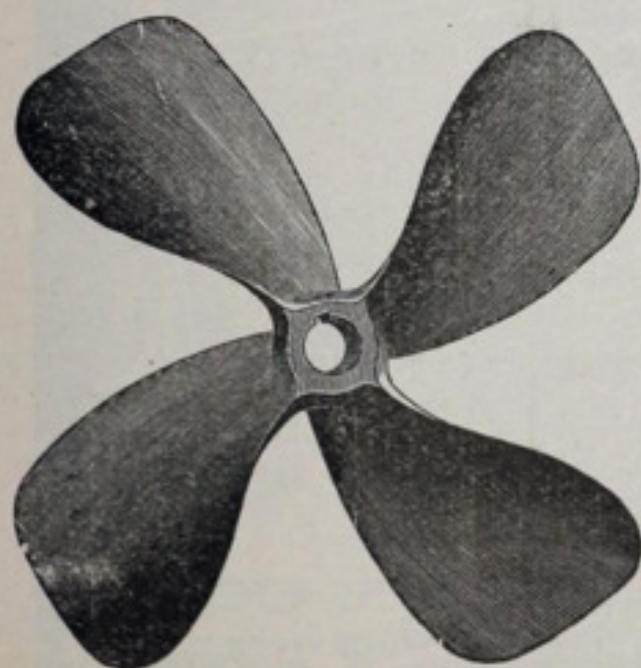
MANUFACTURERS OF

**TRIPLE EXPANSION,
 THREE CYLINDER,
 FORE AND AFT
 And STEEPLE COMPOUND
 MARINE ENGINES,**

High and Low Pressure Engines,
 Sectional, Propeller,
 Tug and Yacht Wheels.
 Cowles Aluminum and Manganese
 Bronze Propeller Wheels.

These Wheels are noted for their extra speed, towing power and proportionate saving of coal.

PRICES QUOTED ON APPLICATION.



UNITED STATES ENGINEER OFFICE,
 Burlington, Vt., October 24, 1892. Sealed proposals for blasting and removing 360 cubic yards of rock shoal, situated between Sistar Islands and Cross-Over Light, St. Lawrence River, N. Y., will be received at this office until 10 a. m., November 24, 1892, and then publicly opened. Specifications, blank forms, and all available information will be furnished on application to this office.
 27-3-17

WOOD :: PRESERVATIVE

Pennsylvania Railroad Standard,

As specified by the Pennsylvania Railroad Company, for use on

**Floating Equipment, Docks, Cars, Flooring, and all
 Wood Work exposed to decay or attacks of Insects.**

May be applied with a Brush in same manner as Paint.

PRICES LOW.

PROTECTION SURE.

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 Chicago. Escanaba. Escanaba.

ESCANABA TOWING & WRECKING CO., Escanaba, Mich.

Tugs, Lighters, Steam Pumps, Hawsers, Hydraulic Jacks and Diving Appliances always ready.

TUG MONARCH, Engine Compound, Cylinder 16 and 30 inches diameter, 30 inch.

Stroke, Steam Pressure Allowed, 125 pounds.

TUG DELTA, Cylinder 20 by 22, Steam Pressure Allowed, 105 pounds.

TUG OWEN, Cylinder 20 by 20, Steam Pressure Allowed, 104 pounds.

CENTRIFUGAL PUMPS, Seven and Fourteen Inch Suction.

Send 50 cents in stamps to the MARINE REVIEW for ten phototypes and gravures of lake steamers neatly bound.

COMBINATION PUMP WATER CLOSET

For Yachts, Pilot Boats,
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For above or below water line. No tank needed, and when below water line you can flush bowl without having to use pump.

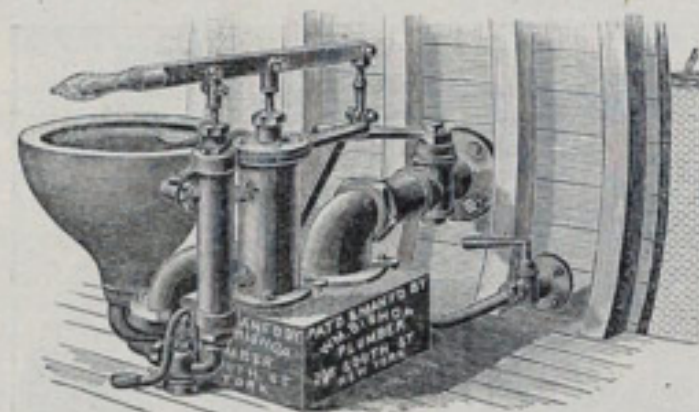
WILLIAM BISHOP,

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Telephone 4811 Cortlandt,

205 South Street, NEW YORK.

Yacht Fittings a Specialty.



"The Steam Engine."

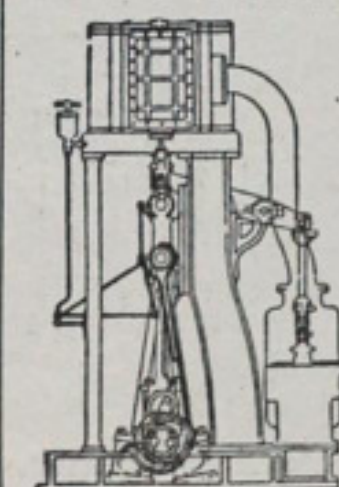
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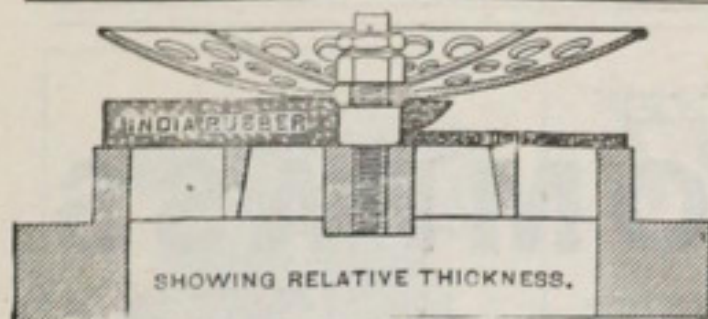
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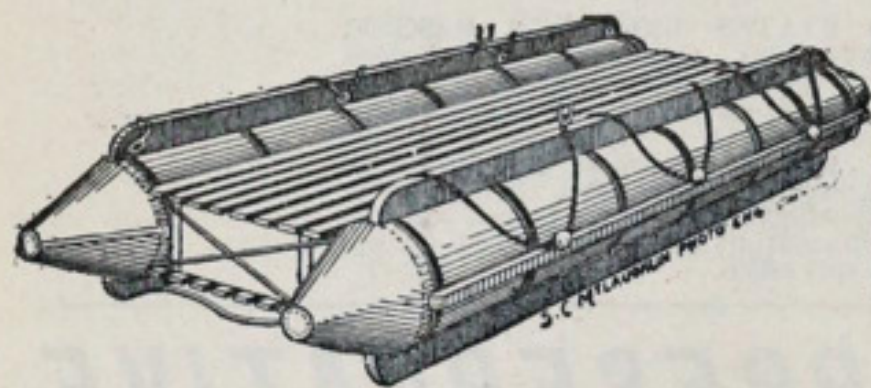
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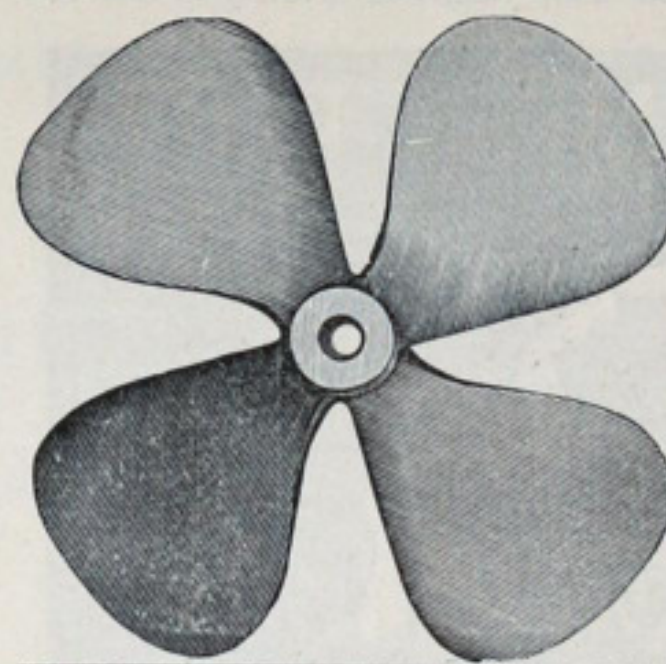
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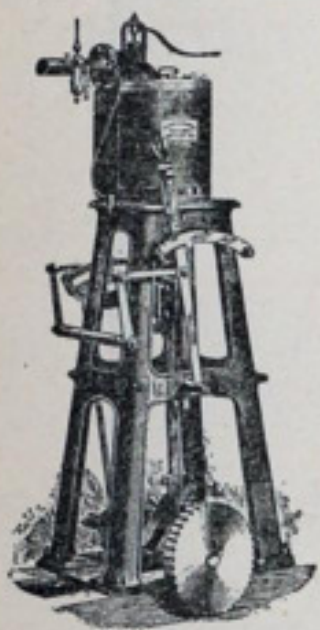
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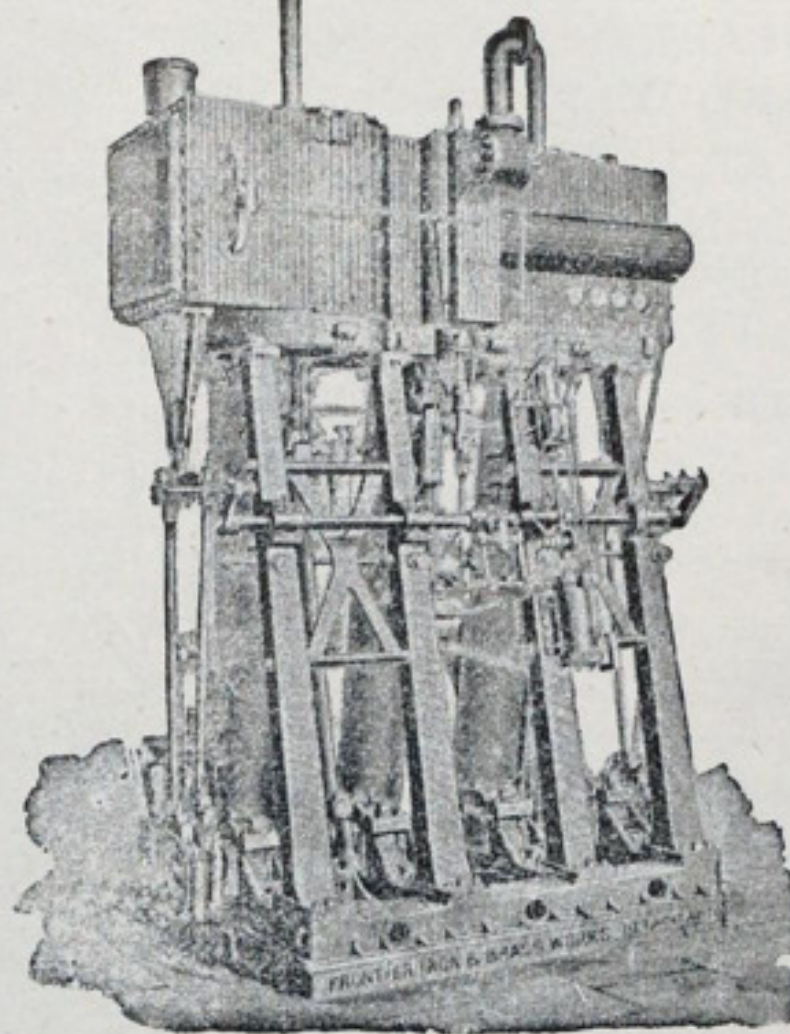
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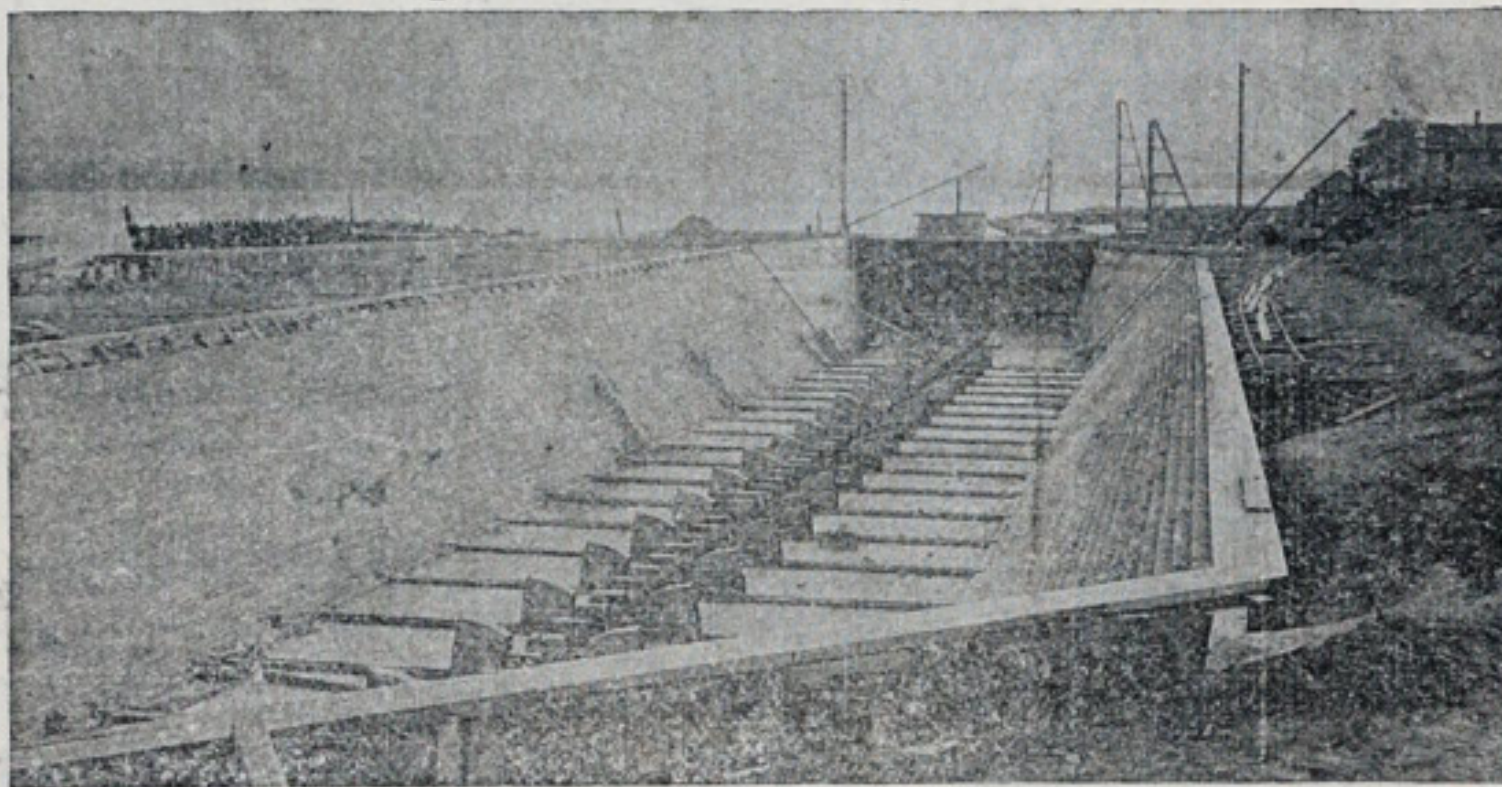
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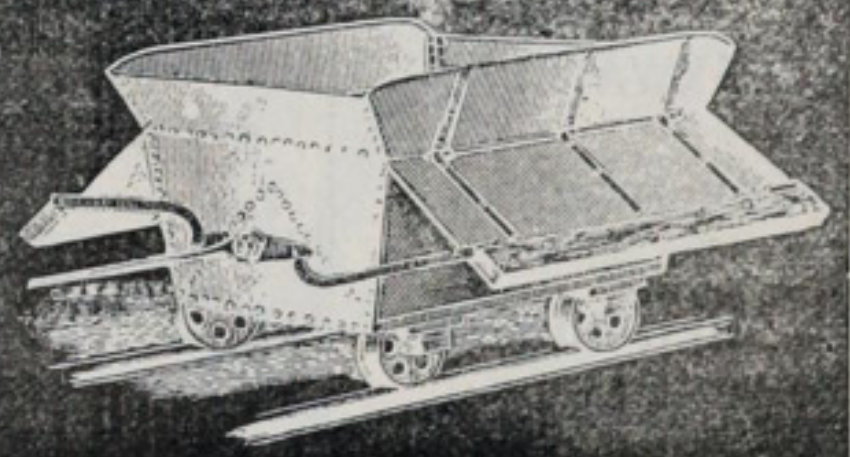
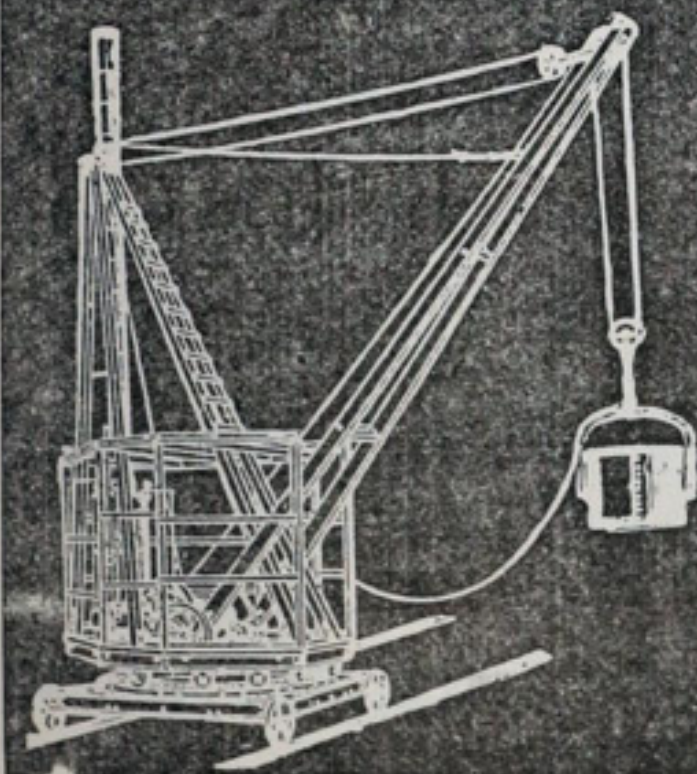
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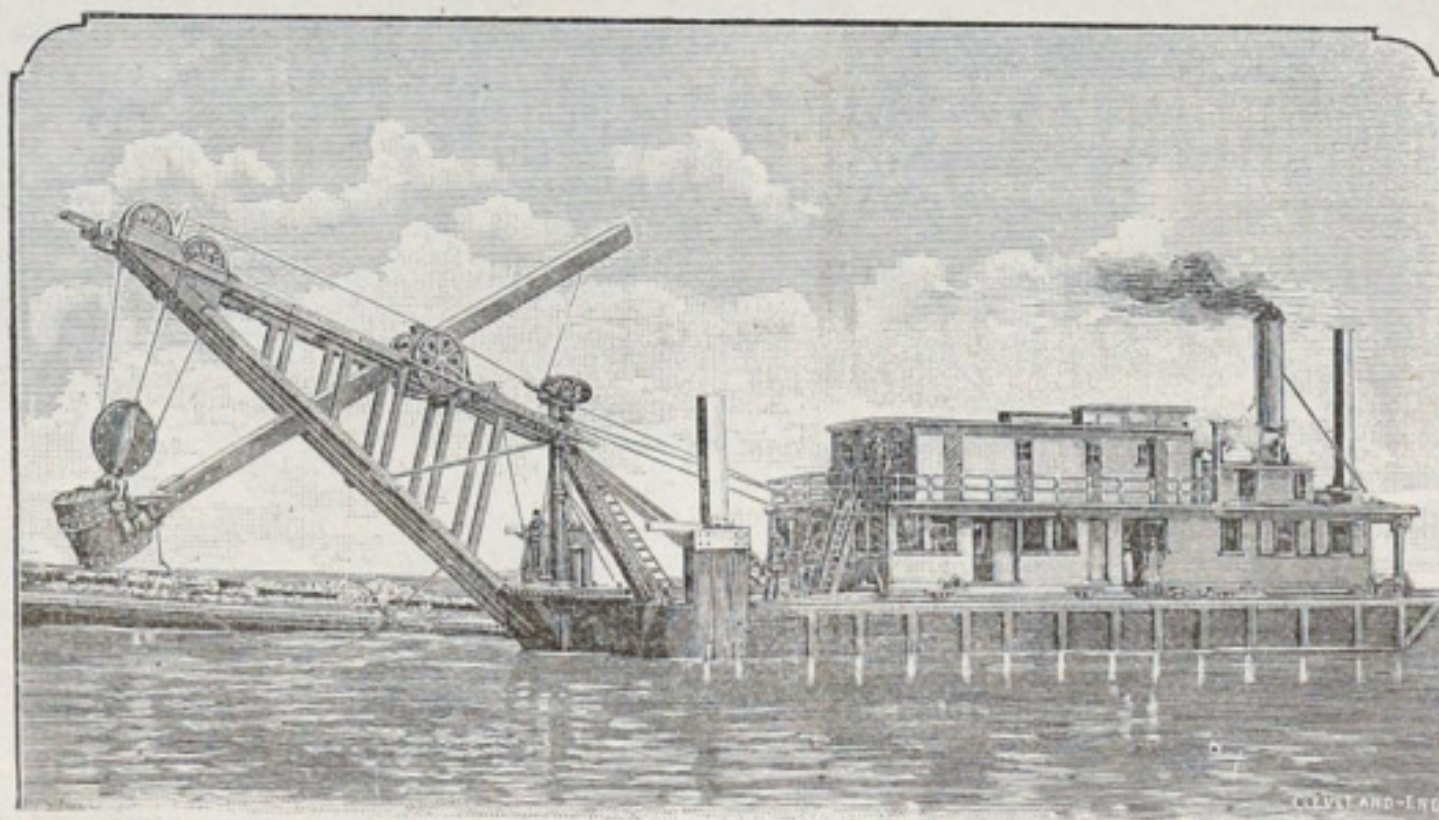
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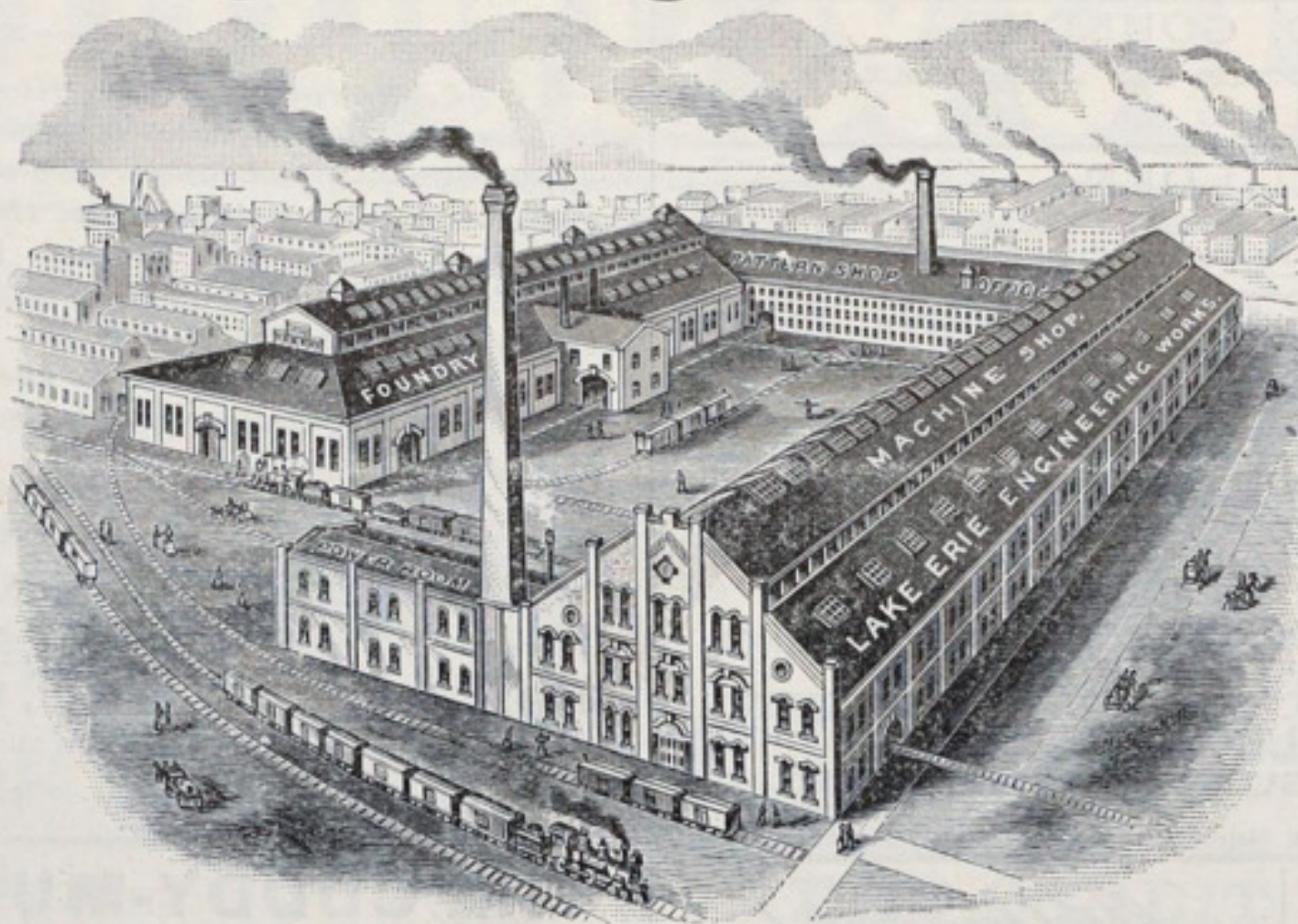
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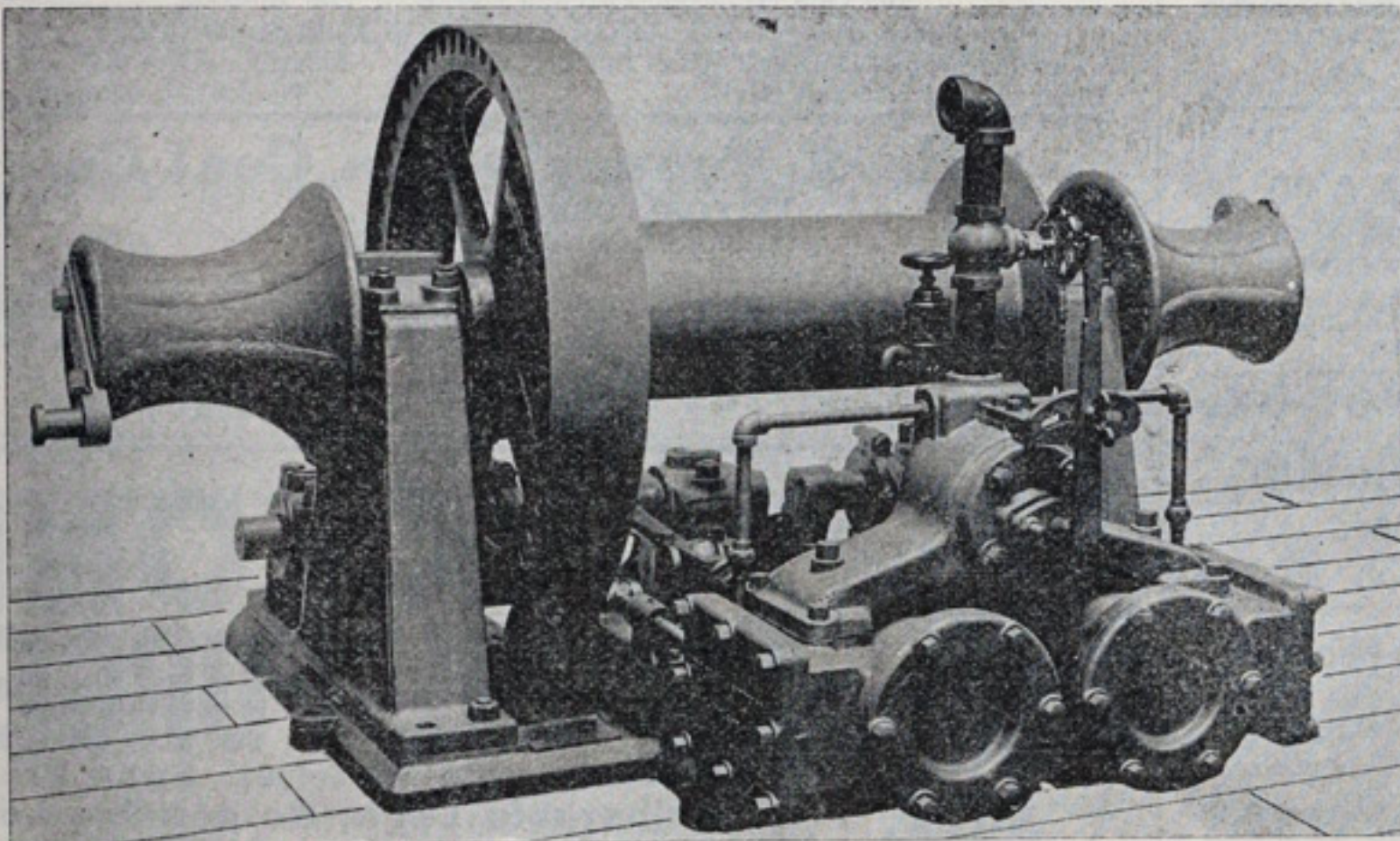
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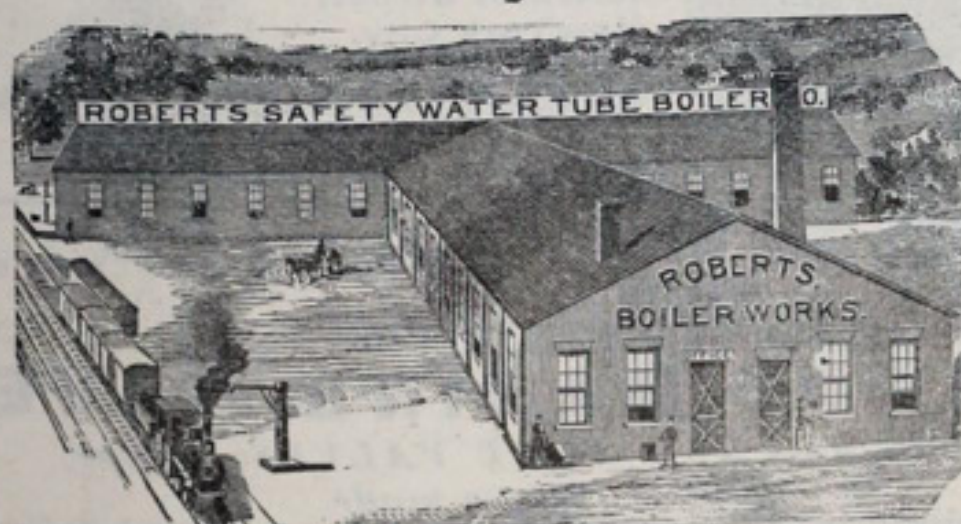
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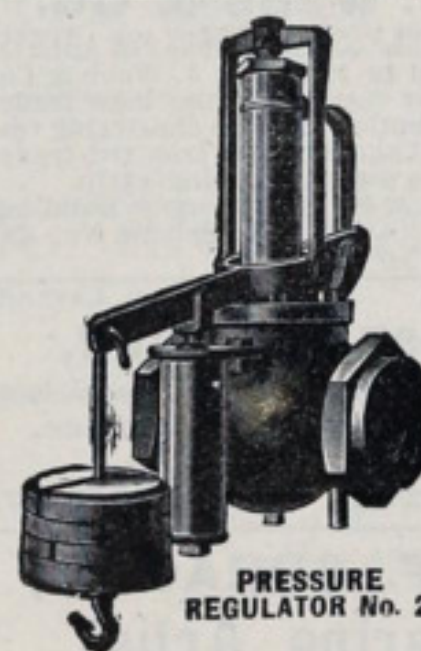
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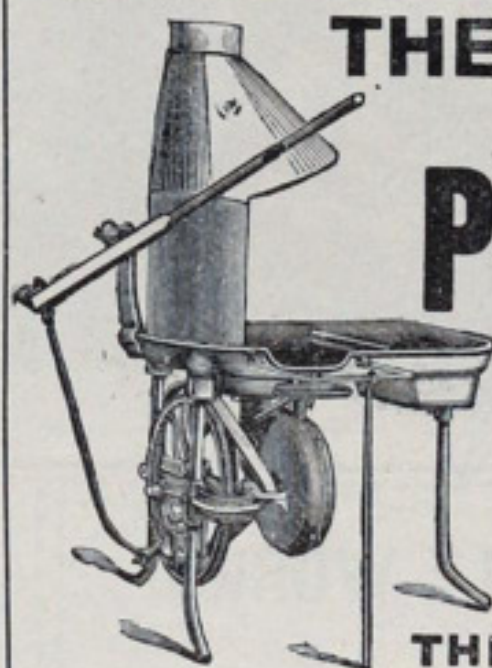
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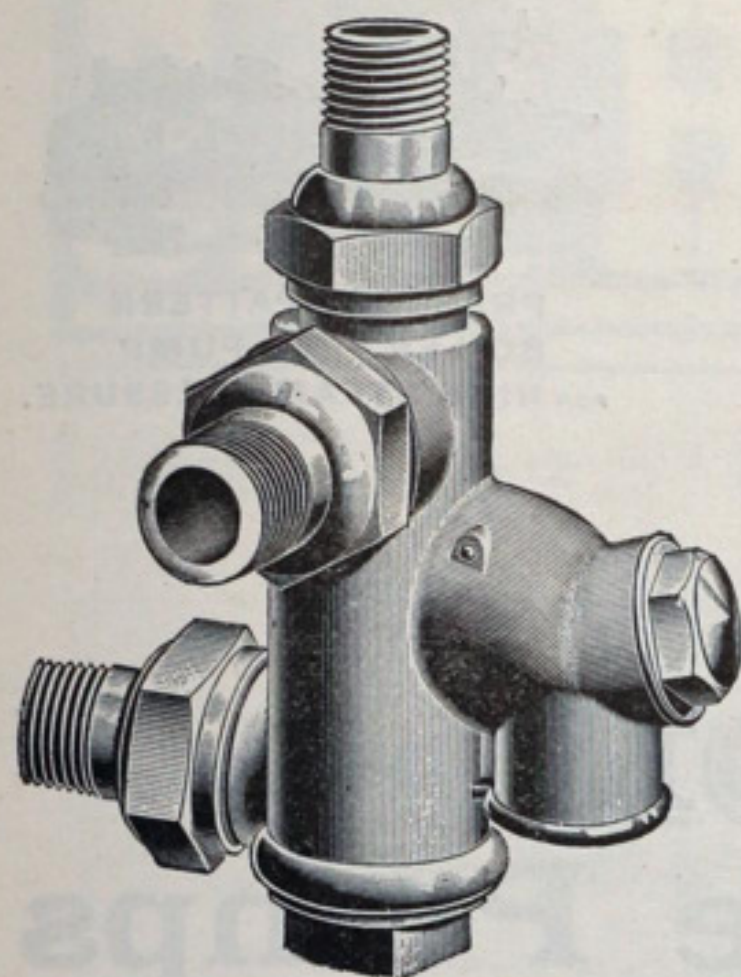
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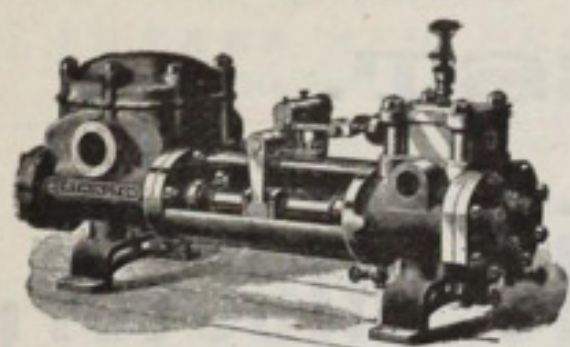
of New York and Albany
Day Line.

San Rafael, of San Francisco, Cal.

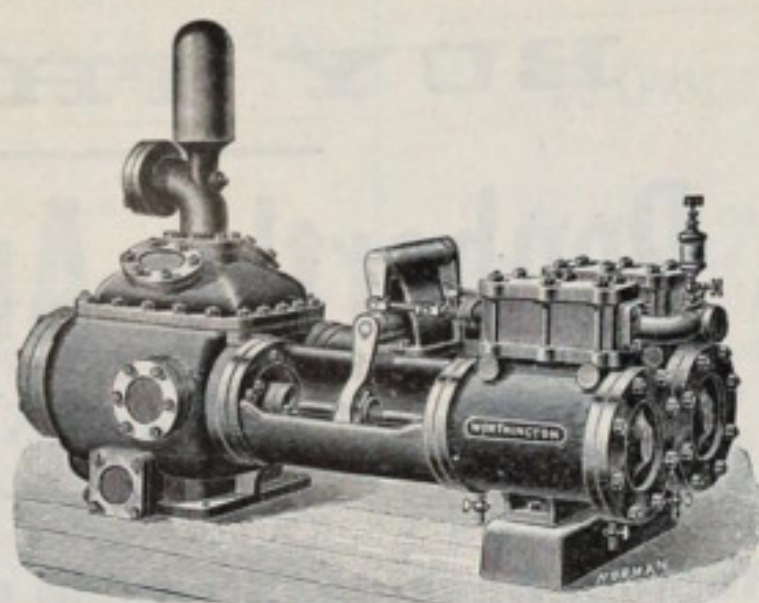
Alaskan, of Portland, Oregon.

. . . . AND MANY OTHERS.

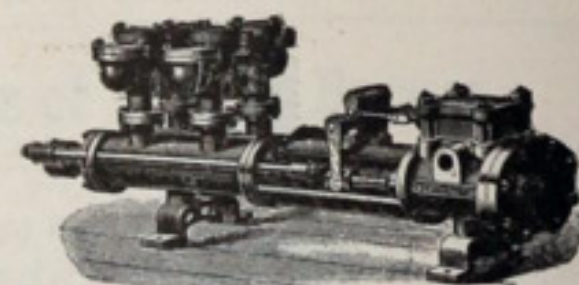
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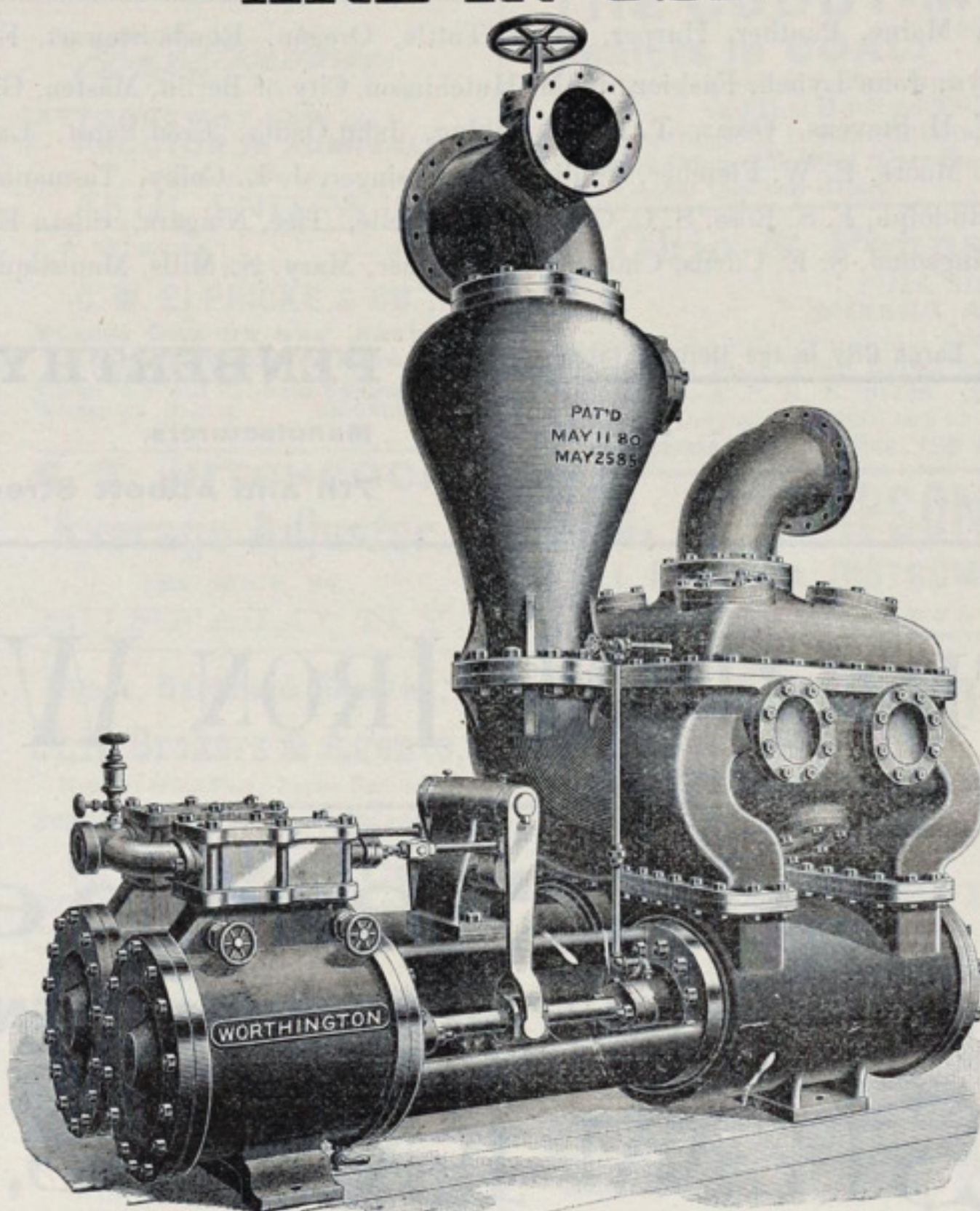
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Niagara,



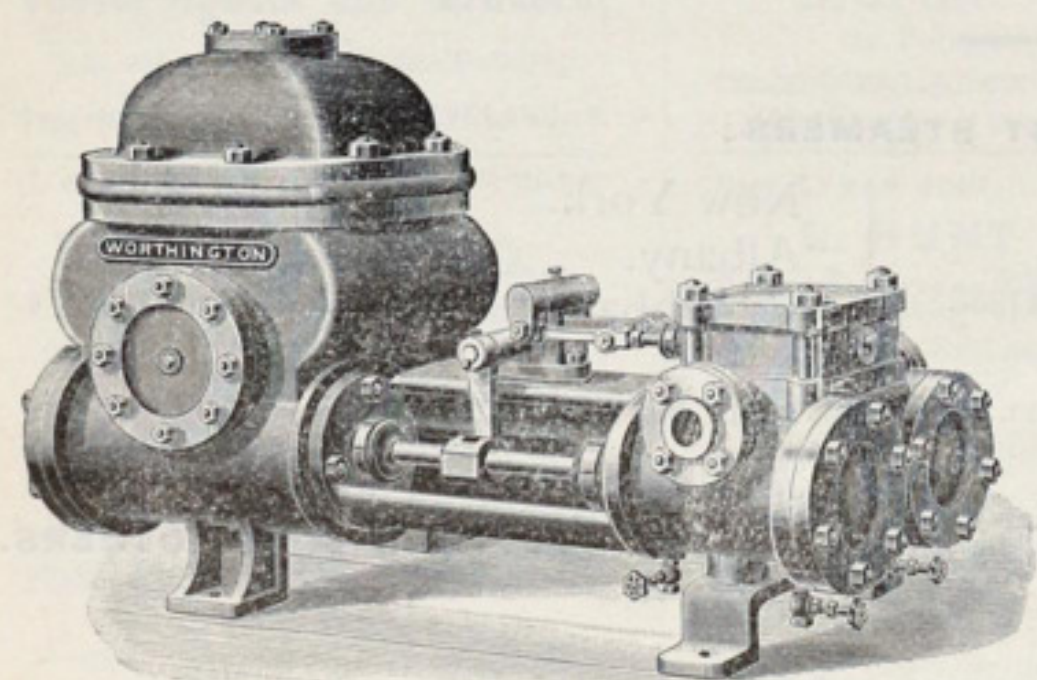
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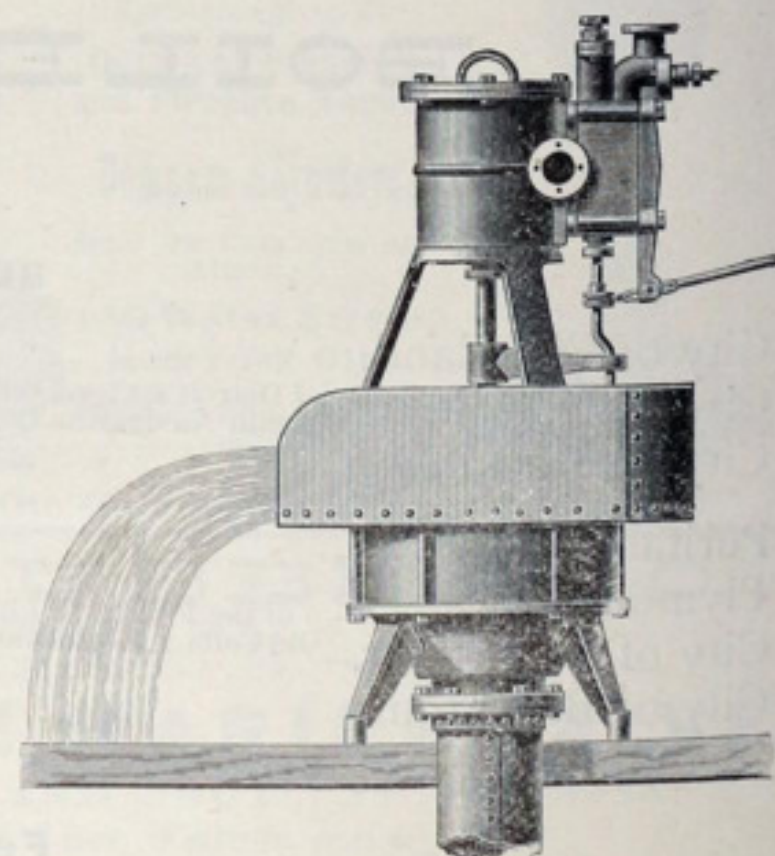
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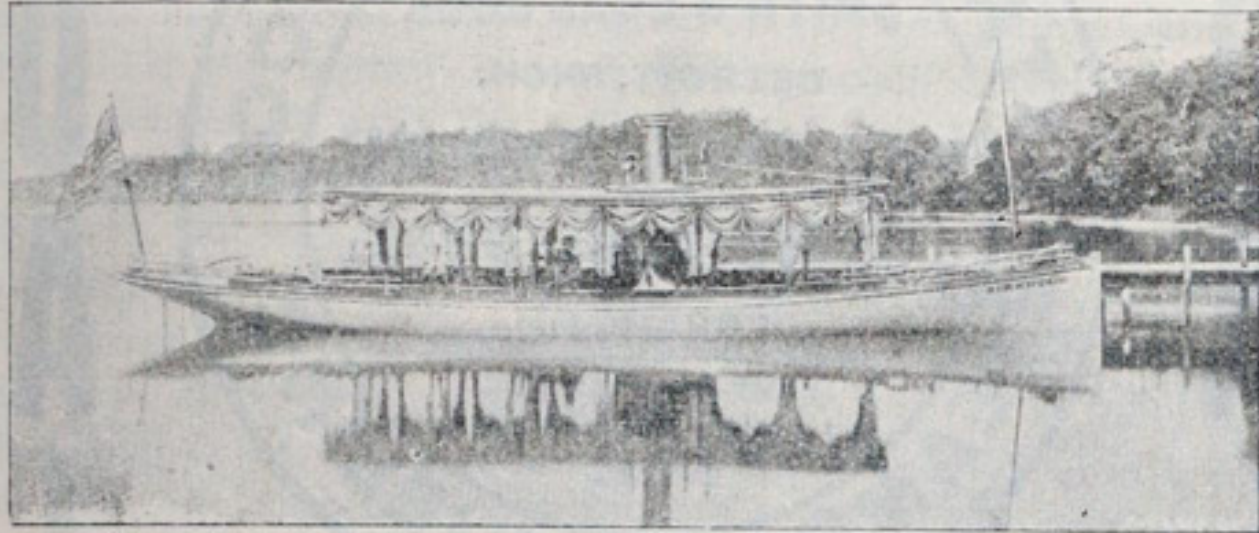


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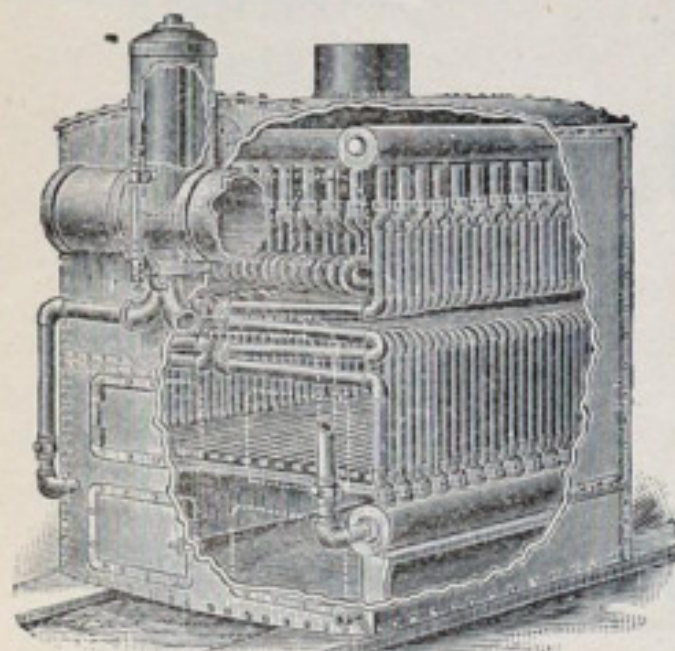
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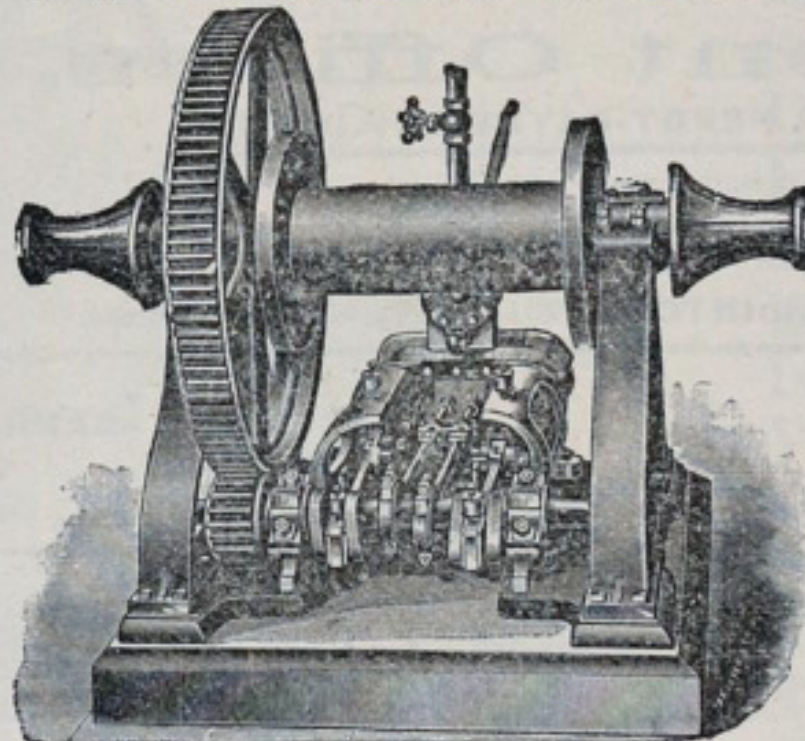
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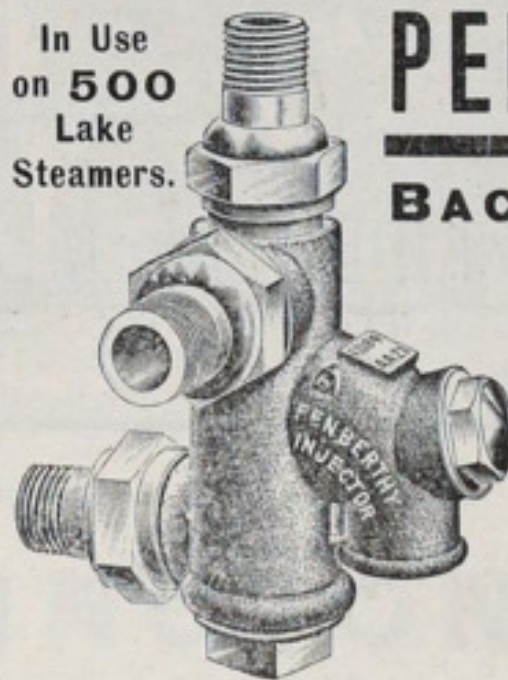
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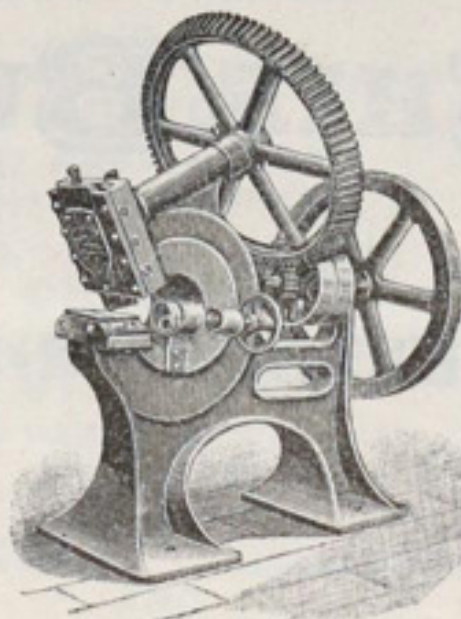
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